

MANUFACTURERS' RECORD

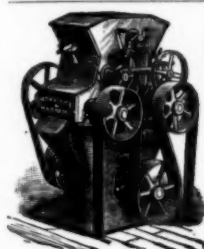
A Weekly Southern Industrial and Hardware Newspaper.

VOL. 9. No. 4.
WEEKLY.

BALTIMORE, MARCH 6, 1886.

\$3.00 PER ANNUM.
SINGLE COPIES, 10 CENTS.

—MANUFACTURERS OF— **JAS. SMITH & CO.** —DEALERS IN—
CARD CLOTHING Works, 413 to 421 Race St., Cor. of Crown. **Manufacturers' & Mill Supplies**
 Of Every Description. **COTTON and WOOLEN MACHINERY.** Office & Store, 137 Market St., Philadelphia. Of Every Description.



Milling Outfits for Flour and Meal.

WE MAKE ROLLS AND PORTABLE MILLS COMPLETE.

Manufactory Established in 1851.

Pamphlets with Prices Mailed Free.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.



ELEVATORS

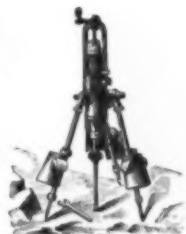
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MORSE ELEVATOR WORKS.
MORSE, WILLIAMS & CO. Successors to CLEM & MORSE
 Manufacturers and Builders of HYDRAULIC STEAM, BELT and Hand-Power, PASSENGER and FREIGHT **ELEVATORS** With most approved Safety Devices.
 Office: 411 CHERRY STREET, Dumb-Waiters, Automatic Hatch-Doors, &c.
 Works: FRANKFORD AVE., WILDEY & SHACKANAXON STS. PHILADELPHIA, PA.
 Branch Office, 108 Liberty Street, NEW YORK.



"ECLIPSE" "STRAIGHT LINE"
ROCK DRILLS, AIR COMPRESSORS,
 Machinery for Tunneling, Grading, Mining, Quarrying, etc.
TEN COMPLETE TUNNELING PLANTS FURNISHED FOR SOUTH PENNA. RAILROAD, PA.

FOR CATALOGUES, ESTIMATES, &c., ADDRESS,
INGERSOLL ROCK DRILL CO., 10 Park Place, N. Y.
MORTON, REED & CO., Agents, Baltimore.



THE MEDART PATENT WROUGHT RIM PULLEY.



OVER 300,000 NOW IN USE. THE LIGHTEST, STRONGEST, BEST BALANCED and CHEAPEST in the WORLD.
 Whole Pulleys from 9 inches to 120 inches diameter. Split Pulleys from 12 inches to 120 inches diameter. All widths of face up to 36 inches, crowning or straight, with single, double or triple sets of arms. Also Tight and Loose Pulleys. Absolute satisfaction guaranteed.
SHAFTING, HANGERS, COUPLINGS, &c.
MEDART PATENT PULLEY CO., 1206 TO 1214 N. MAIN STREET, ST. LOUIS, MO.
 Stores: 99 to 101 W. Second St., Cincinnati. 24 & 26 S. Canal St., Chicago.

J. A. J. SHULTZ, President.

B. C. ALVORD, Secretary.

SHULTZ BELTING COMPANY, ST. LOUIS, MO.

Manufacturers of Shultz Patent Fulled Leather Belting, Lace and Picker Leather.

OUR BELTING is made of Leather, tanned on the surfaces only; the interior (which is the fibre and strength of the hide) is not tanned, but Rawhide fulled and softened by our patent process. Our belting is more pliable, and hugs the pulley better and transmits more power than any other Belt. It does not pull out at the laceholes or rivets. It stretches less than any other Belt. It works equally well for the largest Driving Belts or for the fastest running machinery and smallest pulleys. OUR LACE LEATHER is made of Rawhide, by our patent process, without any tanning and is stronger and will wear better than any other. WE ALSO MAKE THE BEST PICKER LEATHER AND BELT GREASE IN THE COUNTRY. Satisfaction guaranteed.

Southern Agents—FRED. N. OGDEN, New Orleans, La.

J. H. COFFIN & CO., Memphis, Tenn.

J. L. LINDSAY, Richmond, Va.

OUR BUSINESS FOR DECEMBER AND JANUARY,

FANS.

Standard Box Co.,	Williamsport, Pa., No. 9 double
W. G. Warren & Sons,	Holton, Mass., 34" wheel
Allegheny Gas Light Co.,	Allegheny, Pa., No. 5 blower
W. P. Norton,	Bristol, Conn., 2 special
W. F. Corne,	Boston, Mass., 3 single
C. H. Woodruff,	Buffalo, N. Y., 6 blower
T. D. Collins,	Nebraska, Pa., 3 single
Jas. P. Witherow,	Newcastle, Pa., 2 blower
Erie Gas Light Co.,	Erie, Pa., 5
Baker Bros.,	Plattsburg, N. Y., 12 double
Rob't Rae,	New York, Pa., 6 blower
York Gas Co.,	York, Pa., 4
Lewis A. Wright & Co.,	So. Gardner, Mass., 2 single
Skilling, Whitney & Boomer Lumber Co.,	Ogdensburg, N. Y., 2

WITH every desire to avoid sensational advertising, we believe that the Public has a right to the following information, as a basis for the confidence which we ask.

Feeling sure of ourselves, and of the possibilities of our business, we propose to set aside professional tradition and, by legitimate means, to familiarize the Public with the character of our work.

Respectfully,

WESTINGHOUSE, CHURCH, KERR & CO.

HEATERS.

Wynkoop, Hallenbeck & Co.,	New York, 150 H.P.
Atwood & McCaffrey,	Pittsburgh, Pa., 150
E. P. Hampson & Co.,	New York, 150
" "	" " 80
" "	" " 30
L. S. Holt,	Company Shops, N. C., 10
The Westinghouse Co.,	Schenectady, N. Y., 100
John Simmons,	New York, 60
Rutzel & Blake,	" " 25
Henry I. Snell,	Philadelphia, Pa., 20
Manning, Maxwell & Moore,	New York, 12
Pennsylvania Diamond Drill Co.,	Pottsville, Pa., 12
The Porous Plaster Co.,	Sing Sing, N. Y., 8

Fourteen Heaters,

1047 H.P.
(It is proper to state that we commenced handling Heaters on Dec. 1, only.)

WESTINGHOUSE, CHURCH, KERR & CO.,

17 CORTLANDT STREET, NEW YORK.

CONTRACTING AND CONSULTING ENGINEERS,

BOILERS.

Trenton Electric Light & Power Co.,	Trenton, N. J., 150 H.P.
Jas. Doak, Jr. & Co.,	Philadelphia, Pa., 120
Wm. J. Stanley, Jr.,	Great Barrington, Mass., 30
Jas. P. Witherow,	Newcastle, Pa., 12
Meriden Britannia Co.,	Meriden, Conn., 13

Our boiler business was unusually light in December and January.

WESTINGHOUSE

INCANDESCENT INSTALLATIONS.

* Union Depot, P. R. R.,	Pittsburgh, Pa., 1000 Light
* Trenton Electric Light & Power Co.,	Trenton, N. J., 1000
* Allegheny County Electric Light Co.,	Pittsburgh, Pa., 1000
* Allegheny County Electric Light Co.,	Allegheny, Pa., 1000
* The Windsor Hotel,	New York, 500
* The Monongahela House,	" " 300
* The East End Electric Light Co.,	Pittsburgh, Pa., 300
* The Philadelphia Company,	" " 300
* T. C. Jenkins, Grocer,	Tyrone, Pa., 250
* Morrison, Beare & Cass, Paper Mill,	" " 250
* The Pittsburgh Club,	" " 250
* The Westinghouse Air Brake Co.,	Philadelphia, Pa., 250
* James Doak, Jr. & Co., Worsted Mill,	Wheeling, W. Va., 125
* Wheeling Steel Works,	Newburgh, N. Y., 100
* Steamer Newburgh,	" " 25
* Fishkill-on-Hudson,	Altoona, Pa., 25
* G. A. Morrison,	New York, 25

(With all the above orders marked * the steam plant was also furnished by us.)

WESTINGHOUSE ENGINES.

Allegheny Co. Electric Light Co. (9th order)	Allegheny, Pa., 75 H.P.
Allegheny Co. Electric Light Co. (10th order)	" " 75
Trenton Electric Light & Power Co.,	Trenton, N. J., 75
" " (2d order)	" " 75
Glasgow Iron Co.,	Pottstown, Pa., 60
M. E. Stout, Planing Mill,	Farmer Village, 60
Windsor Hotel, Electric Light,	New York, 60
Town of Union Silk Mill, (2d order)	Union Hill, N. J., 60
Curtis, Davis & Co., Soap,	Boston, Mass., 45
Ashcroft Mfg. Co., Machine Shop,	Bridgeport, Conn., 45
James Doak, Jr. & Co., Woolen Mills,	Philadelphia, Pa., 45
J. H. & N. A. Williams, Hardware,	Utica, N. Y., 40
W. F. Eighmy, Grist Mill,	Daggett's Mills, N. Y., 35
W. F. Stetson, Saw Mill,	Cherry Creek, N. Y., 35
H. Powell Ramsdell, Paper Mill,	Newburgh, N. Y., 35
J. C. Bruggman, Centrifugal Pump (2d order)	Allegheny, Pa., 35
E. Balbach & Son, Smelters, (11th order)	Newark, N. J., 25
Wm. Stanley, Jr., Machine Shop,	Great Barrington, Mass., 25
Sherburn & Co.,	Boston, Mass., 25
J. P. Witherow, Machine Shop,	Newcastle, Pa., 25
New York "Daily News,"	Worcester, Mass., 20
Worcester Steel Co.,	Meriden, Conn., 15
Meriden Britannia Co.,	Boston, Mass., 15
Boston "Globe," (2d order)	Weehawken, N. J., 15
N. Y. L. E. & W. R. R.,	Homestead, N. J., 15
Givernaud Bros., Silk Mill, (10th order)	" " 15
" " (11th order)	" " 15
Erie Gas Light Co.,	Erie, Pa., 15
Steamer Fishkill-on-Hudson, Electric Light,	Newburgh, N. Y., 15
Steamer Newburgh, Electric Light,	" " 15
Jas. Doak, Jr. & Co., Woolen Mills, (2d order)	Philad., Pa., 15
J. P. Witherow, Machine Shop, (2d order)	Newcastle, Pa., 12
Lombard, Ayres & Co., Refiners, (11th order)	Bayonne, N. J., 10
Lawrence Machine Shops, Pumps (4th order)	Lawrence, Mass., 10
" " (5th order)	" " 10

Lawrence Machine Shops, Pumps (6th order)	Lawrence, Mass., 5 H.P.
" " (7th order)	" " 5
The Sayles Bleachery, Centrifugal Pump,	Fawtucket, R. I., 8
Geo. S. Morrison, Electric Light,	New York, 5

Total, Thirty-nine Engines, 1200 H.P.
Of these, sixteen engines, or 41 per cent., were repeated orders.
The above list includes only those Westinghouse Engines which were sold in New England and the Middle States, and does not include those sold West or South, and in Foreign countries.

REYNOLDS-CORLISS ENGINES.

Carnegie Bros. & Co., Furnace,	Pittsburgh, Pa., 84" x 60'
Two Blowing Engines, each	33'
E. M. Butz & Co., Steel Works,	Pittsburgh, Pa., 45" x 60"
One Blowing Engine,	32' x 60"
Two Train Locomotives, each	40" x 48"
One Pair Reversing Engines,	38" x 48"
Moses Newton, Holyoke, Mass.,	35" x 48"
Total, about 6000 H.P.	14" x 36"

PAPER PULLEYS.—Being the "off months" in the pulley business, sales were comparatively light, amounting to about an even \$1,000.

With this, but not included in the above amount, was a proportionate quantity of shafting and general sundries.

CONSULTATIONS.—The demand for our services in this department is fully as active as we desire. Several important matters of a purely professional nature have been handled by us during the past sixty days, but of course of such a nature that we can give no names, and the amount of fees received is equally our private business.

ACCRECATING, IN ROUND NUMBERS, \$150,000.

THE WHITIN MACHINE WORKS,

J. LASSELL, President and Treasurer.

G. E. TAFT, Agent.

H. ELLIS, Superintendent.

— MANUFACTURERS OF —

COTTON MACHINERY

— Openers, * Lappers, * Cards, —

Railway Heads, Drawing,

RING SPINNING, SPOOLERS, WET and DRY TWISTERS,

REELS,

— WARPERS, * DRESSERS, * LOOMS, * & C. —

— Whitinsville, Worcester County, Mass. —

SACO WATER-POWER MACHINE SHOP,

— BIDDEFORD, MAINE, —

Manufacturers of

COTTON * MACHINERY

OF THE MOST IMPROVED PATTERNS.

CARDS,

Cylinders, 36x36 and 36x30, with 20 tops and Self-Strippers and Railway Troughs. Union Cards, with workers, strippers and tops.

FINISHER RAILWAY HEADS.

DRAWING FRAMES, ANY LENGTH, WITH 3, 4 AND 5 LINES OF STEEL ROLLERS.

English Slubbers and Fly Frames, With Long or Short Bolsters.

— BOBBINS — 12x6, 11x5½, 10x5, 9x4½, 8x4, 7x3½, 6x3, and 5x2½.

RING SPINNING FRAMES, 2, 4½, 4¾ AND 4½ INCH RINGS.

— TWISTERS. —

SELF-ACTING MULES, Parr, Sharp and Roberts' and Higgins' Pattern,

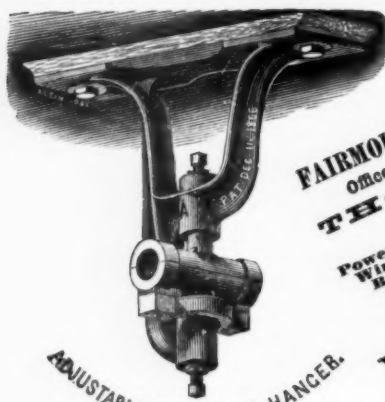
1½, 1 5-16, and 1¼-inch Gauge.

S. W. RICHARDSON, Treasurer,

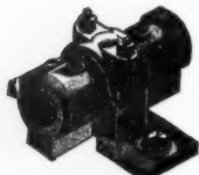
No. 1 Simmons Building, Boston.

JAS. H. McMULLAN, Agent,

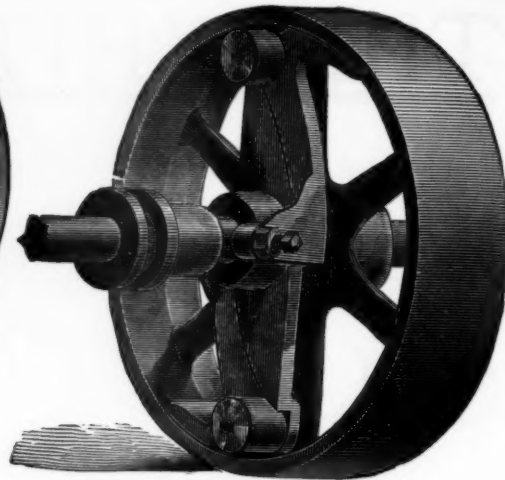
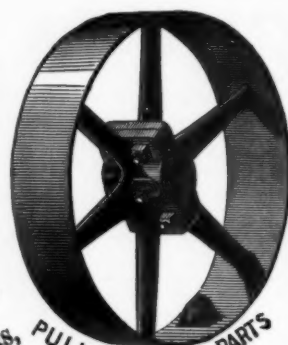
Biddeford, Maine.



ADJUSTABLE SELF-OILING HANGER.

Ball and Socket
Self-Oiling Pillow Block.DOUBLE-BRACED ADJUSTABLE
SELF OILING HANGER.Adjustable Self-Oiling
Post Hanger.
6 inches from post to
center of shaft.

FAIRMOUNT MACHINE WORKS.
Office, 2106 Wood St., Philadelphia.
THOMAS WOOD,
Manufacture as Specialties
Power Looms, Patent Hobbin or Quill
Winding Machines, Plain and Presser
Beaming Machines, Reeling,
or Spooling Machines, Dyeing, Sizing,
Scouring, Fulling and Cal-
endering Machines,
WARPING MILLS,
16, 18 and 20 Yards Circumference,
WITH IMPROVED HECKS,
SHAFTING,
With Patent
ADJUSTABLE SELF-OILING HANGERS, PULLEY IN TWO PARTS
8, 10, 12, 15, 18, 20, 24 and 30 in. drop.
Also WALL, POST AND GIRDER HANGERS.
Pulleys, from 4 inches to 10 feet in diameter.
PATENT FRICTION PULLEY.
Pulleys in two parts, any size required.
PATENT HOISTING MACHINES.
Oil Presses for Lard, Fish and Paraffine.

**PATENT FRICTION PULLEY.**

Simple, reliable and very durable.
Suitable for any kind of driving, they
serve equally well as driver or driven.

Special Driving,
such as Angular, Muley, and Gallows Driving,
furnished for any position
where possible to transmit power by belts.
PULLEYS from 4 inches to 10 feet in diameter.

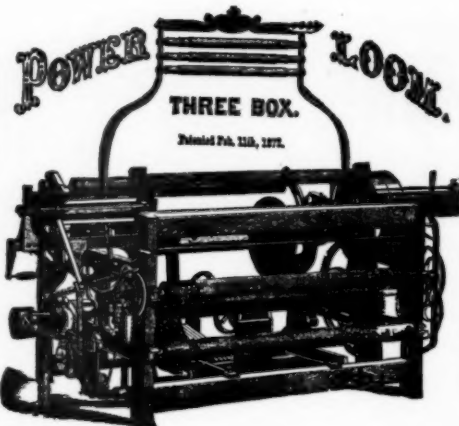
Why use old style Bearings, that require oiling
every day, when you can get Bearings at less cost
that only require oiling once in Six Months, and
thus save oil and labor enough to pay for the bear-
ings in use. Test the matter for yourselves; a
trial always secures the trade.

ADDRESS,

THOS. WOOD,

Office, 2106 Wood St.

PHILADELPHIA, PENNA., U. S. A.



THE LAMB KNITTING MACHINE MANUFACTURING CO.

MANUFACTURERS OF

THE LAMB KNITTING MACHINES,

TUTTLE KNITTING MACHINE,

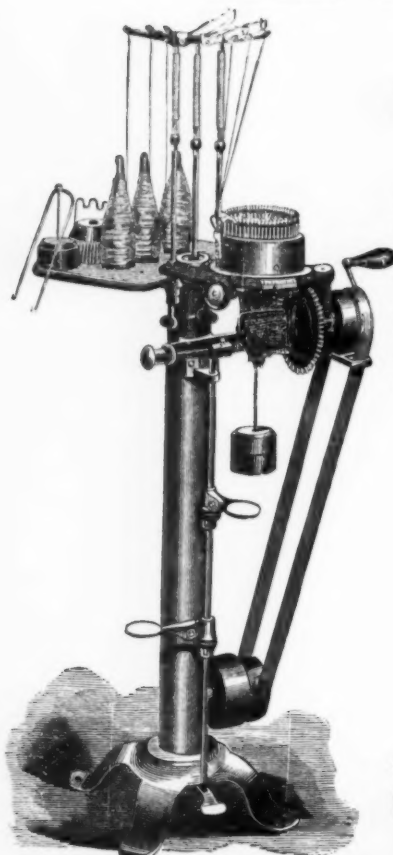
—AND—

New AUTOMATIC CIRCULAR RIB KNITTING MACHINE

New Automatic Circular Rib Knitting Machine

For Knitting Ribbed Tops for Socks, Shirt Cuffs,
and, Drawer Bottoms.

This machine will produce from twenty-five to thirty dozen pairs of Cuffs in
ten hours, making the WELT and LOOSE Course AUTOMATICALLY. The Needle
Cylinder and Dial are made of FORGED CAST STEEL, and everything
about the machine is built in the most THOROUGH and WORKMANLIKE
manner, with the view of having them run the longest possible time with-
out repairs. They are complete
within themselves.

We make them any number of
ribs desired.**THE LAMB MACHINE
IS THE ONLY
MACHINE**

THE LAMB MACHINE.

Send for Full Particulars of
the Above Machines to



That knits hosiery or tubular work of all sizes.
That narrows and widens on hosiery or tubular work.
That knits a regular, right-angle heel, such as is knit by hand.
That narrows off the toe.
That knits a sock or stocking complete.
That knits mittens and gloves of any size without a seam.
That forms genuine Ribbed or Seamed work.
That knits the Double, Flat, or Fancy Webs.
That knits an elastic seam-stitch Suspender with button holes.
That knits the Afghan stitch, Cardigan Jacket stitch, Fancy
Ribbed stitch, the Raised Plaid stitch, the Nubia stitch, Shell
stitch, Unique stitch, Tidy stitch, &c., &c.

It is now the Standard Machine for manufacturing all
lengths of needle beds, from 8 inches by 60 inches, and cuts from
four needles to the inch to ten to the inch. More of these ma-
chines have been made and sold than all others combined.



The Lamb Knitting Machine Mfg. Co's New Automatic
CIRCULAR RIB KNITTING MACHINE,
For Knitting Ribbed Tops, for Socks, Shirt Cuffs
and Drawer Bottoms.

THE LAMB KNITTING MACHINE MANUFG. CO., CHICOPEE FALLS, MASS.

IN CORRESPONDING, PLEASE MENTION "THE MANUFACTURERS' RECORD."

C. E. RILEY.

WM. B. GRAY.

RILEY & GRAY,

—SUCCESSORS TO—

HOWARD & BULLOUGH, & RILEY,

SOLE IMPORTERS OF

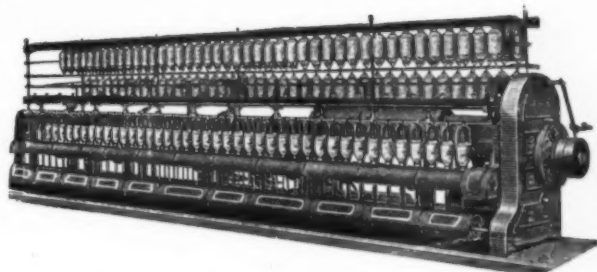
HOWARD & BULLOUGH'S

Cotton Machinery.

ALSO, IMPORTERS OF

Woolen and Worsted Machinery, Card Clothing, Etc.

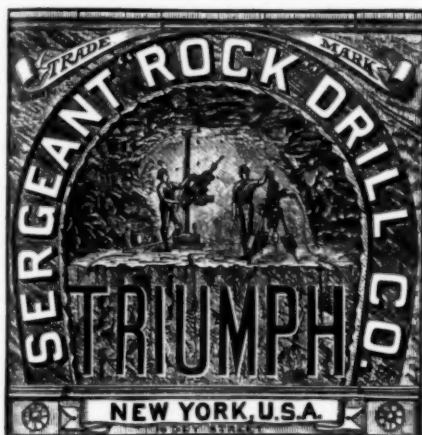
Correspondence Solicited.

19 PEARL ST., BOSTON, MASS.**GANDY'S PATENT MACHINE BELTING**

GOLD MEDAL AWARDED NEW ORLEANS, 1885, FOR BEST RUNNING BELTS.

*Made PERFECTLY Straight and any Length without Joints.**For Main Driving it is the Best. Much Cheaper Than Leather.*

MANUFACTURED BY

THE GANDY BELTING CO., BALTIMORE, MD.**THE "TRIUMPH" ROCK DRILL**
and NORWALK AIR COMPRESSOR

Are the Latest and Most Improved Machines that were ever designed for the work required of them. They are the Most Simple, Economical and Effective now known, and will satisfy all Purchasers.

Boilers, Steam Pumps, Hoisting Engines, Pipe and Fittings, Electric

Blasting Apparatus, Powder, Caps and Fuse, Steam and Air Hose, Wire Rope,

—And General Mining and Contractors' Supplies.—

Complete Specifications for Rock Drilling and Mining Plants Furnished on Application.

SERGEANT DRILL CO., 16 Dev Street, New York, U. S. A.

—THE—

King of Portable Mills

FOR GRINDING ALL KINDS OF GRAIN.

The Kaestner Patent.Built in Four Sizes—16, 20, 24 and 30 inches. Suitable for any Power, 2 to 15 horse.
Each mill guaranteed to give entire Satisfaction or money refunded.

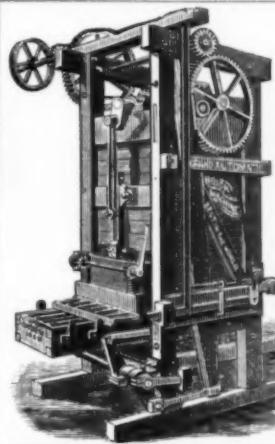
◆ OVER 6,000 IN USE. ◆

Live references in every State and Territory. Will grind Wheat, Corn, Rye, Oats, etc. Write for Catalogues, etc.

CHAS. KAESTNER & CO.**M**achinists, Founders and Mill Furnishers.

GRAIN ELEVATOR MACHINERY A SPECIALTY.

303--311 S. Canal St., CHICAGO, ILL.

**The GRAND AUTOMATIC
Brick Machine.**

Well Tempered Brick are the Most Reliable.

The Grand Automatic makes the best tempered Brick in the world. It is the only Machine that makes better brick in every respect than can be made by hand. Send for catalogue to

JONATHAN CREAGER,
131 E. Front St., Cincinnati, O.**The Spiral Pug Mill
QUAKER BRICK MACHINE.**

Capacity 40,000 Perfect Brick Per Day!

Great Saving in Labor and Expense!

We contract to furnish complete Brick-yard outfits,—Engines and everything needed complete. Write for our handsomely illustrated catalogue, containing valuable information. Estimates furnished. Correspondence solicited. Address

FLETCHER & THOMAS, Indianapolis, Ind.

Mention MANUFACTURERS' RECORD.



THE DEANE STEAM PUMP CO., HOLYOKE, MASS.

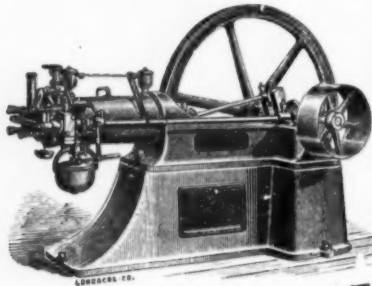
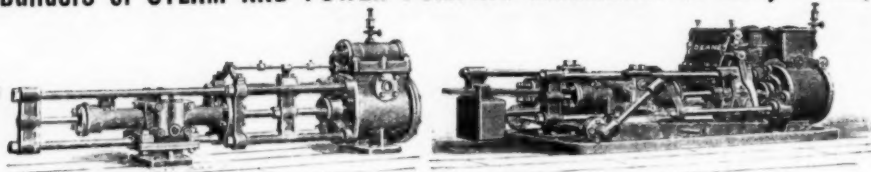
Builders of STEAM AND POWER PUMPING MACHINERY of Every Variety.

Warerooms:

Boston, New York,
Philadelphia,
Chicago, St. Louis.

SEND FOR CATALOGUE NO. 12.

Hydraulic Pressure
* **PUMPS** *
A Specialty.
SINGLE OR DUPLEX PATTERN.



Over 14,000 in Use.

Otto Gas Engine

20 to 70 per ct. less Gas consumption than ANY other ENGINE.

Working Without Boiler, Steam, Coal, Ashes or Attendance.

Started instantly by a Match, it gives full power immediately. When stopped, all expense ceases.

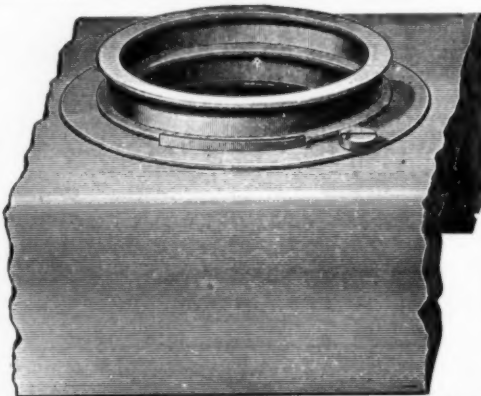
No explosions, no fires nor cinders, no gauges, no pumps, no engineer or other attendant while running. Recommended by insurance companies. UNEQUALLED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &c. Sizes: 1 to 25-horse power.

Branch Office, 214 Randolph St., Chicago.

SCHLEICHER, SCHUMM & CO., N. E. cor. 33d and Walnut Sts., Philadelphia.

DOUBLE ADJUSTABLE
Spinning Rings.
GEORGE DRAPER & SONS,
HOPE DALE, MASS.

TELEGRAPH ADDRESS AND RAILROAD STATION,
MILFORD MASS.



Number of Rings sold.	Number of Rings sold for repairs.
1869... 6,025.....	
1870... 20,258.....	
1871... 38,648.....	
1872... 94,264.....	12
1873... 117,301.....	
1874... 168,382.....	500
1875... 223,924.....	963
1876... 185,319.....	947
1877... 270,811.....	946
1878... 215,214.....	3,509
1879... 336,018.....	8,007
1880... 507,860.....	11,264
1881... 659,730.....	8,074
1882... 636,715.....	22,515
1883... 416,500.....	21,689
1884... 310,869.....	25,105
1885, 9 mos. 212,056.....	22,373
Total number sold.....	126,604
Total number in use 4,363,190.	

The great durability of our Rings is shown by the fact that we have more rings in use over twelve years old than all we have sold for repairs.

This statement shows unmistakably that a mill once supplied with our rings need think but little of the cost of repairs. As the number sold for repairs is an average of about twenty per cent. of the number sold the tenth year before, the average life of our rings will be at least twelve years.

Do not make the mistake of ordering new frames without specifying Double and Adjustable Rings. While they cost more to begin with, they are much the cheapest in the end, on account of their uniform excellent quality and unparalleled durability.

As an encouragement to use none but the best of Rings, we reduced the price on and after the first day of January, 1885, of those 1 1/4 inches or less in diameter, without holders and screws, to be used only to take the place of our rings worn out, to 12 cents each.

DICKSON MANUFACTURING CO.

MAKERS OF CABLE MACHINERY FOR NEW YORK & BROOKLYN BRIDGE.

LOCOMOTIVES FOR ALL KINDS OF SERVICE.

BLAST ENGINES FOR IRON & STEEL WORKS.

BESSEMER STEEL PLANT MACHINERY.

DERRICK & WRECKING CARS.

SPRING PLATE STEEL TIRED CAR WHEELS. CAST CAR WHEELS, MINE CAR WHEELS.

STATIONARY ENGINES, HORIZONTAL & VERTICAL, SINGLE & IN PAIRS.

HIGH PRESSURE, CONDENSING & COMPOUND, HOISTING ENGINES.

CARRIAGES, DRUMS & MACHINERY.

COLLIERY MACHINERY.

COAL & PHOSPHATE BREAKERS WITH PATENT REMOVABLE STEEL TEETH.

SCREENS & VENTILATING FANS.

PUMPING ENGINES OF HIGH DUTY TYPES.

CORNISH PUMPING ENGINES, PUMPS, VALVES.

BOILERS OF EVERY KIND & SIZE.

HANGERS, SHAFTING & PULLEYS.

GEARS BOTH CAST & CUT.

HEAVY MACHINERY OF ALL KINDS.

NEW YORK OFFICE 112 LIBERTY ST.

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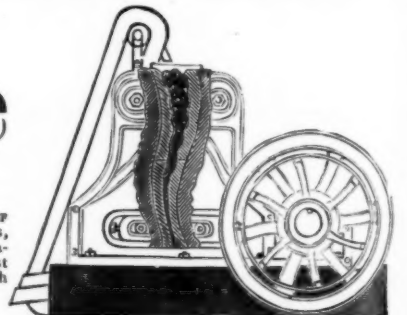
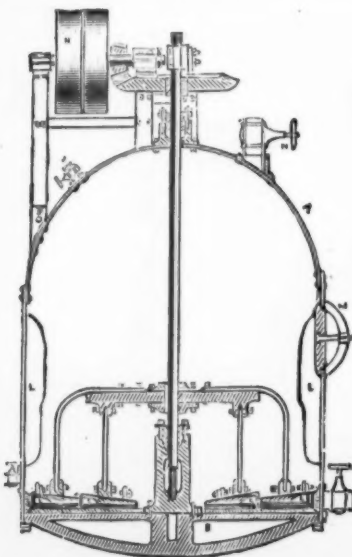
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BALTIMORE Manufacturers' Record.

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BALTIMORE, MARCH 6, 1886.

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more.

THE Baltimore MANUFACTURERS' RECORD recently entered its ninth volume. It has become one of the foremost journals of its class. It is one of the most zealous and best informed advocates of Southern interests, and it is not perhaps too much to say that it has done more than any other newspaper to disseminate correct information in regard to the resources, capabilities and industries of the Southern States. It is an enthusiastic protectionist, but that does not interfere with its usefulness in the direction indicated, and is, indeed, a favorable recommendation to a large class who believe that the future prosperity of the South will be promoted by a protective tariff.—Lexington (N. C.) Dispatch.

ADVERTISERS wishing to reach manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the BALTIMORE MANUFACTURERS' RECORD. We are always prepared to furnish proof of our claims as to circulation.

Protection for Raw Materials.

The Lynchburg News seems to be laboring under the impression that the friends of protection in the South favor protection for the manufactured goods only, and are willing to have free trade where iron ore, coal, &c., are concerned. The News must certainly have paid but little attention to the arguments of Southern protectionists. Protection for the ore as well as for the pig iron, for rice and sugar as well for coal; in fact, protection that is for the benefit of all classes is what the South wants. Commenting on the letter of Mr. W. H. Patterson, of the Lynchburg Iron Co., to the MANUFACTURERS' RECORD, in favor of a Southern tariff convention, the News says:

There should be a fair and impartial regard for all interests. For instance, raw materials should have as much benefit of the protective system as the manufactured articles. Why not? They are as much the property of the owner and just as important to him as the pig iron of the furnace-man or the loom product of the cotton manufacturer.

Yet we see it stated that the tariff bill to be introduced in the House of Representatives by the Ways and Means Committee of that body will, it is understood, have a large free list, embracing salt, lumber, iron ore, and nearly all the raw material used in the manufactures of this country.

Is that fair or just to the millions of ores, of lumber and salt in Virginia? When the hand of enterprise develops these natural elements of wealth, why should they be made to compete with the products of the old world any more than manufactured articles? Why should our ports be thrown wide open to the convict-produced and ballast-shipped ores of Spain and Africa, to the detriment of the ores buried in our own mountains? Why should tin be brought in so cheaply that the rich mines of Rockbridge cannot be developed? Iron ores can be brought cheaper from Europe to the furnaces of Pennsylvania than they can be from the mines of Virginia, and the business of shipping ores from the State has, we believe, almost ceased. Yet these furnace-men who clamor so for increased "protection" would doubtless cry out against protection for the ores which their stacks consume. Their ox would then be gored, and that would alter the case. There should be reason and fairness in all things; and while the manufacturer is being made rich, the owner of the materials which he manipulates should not be ignored and made poor.

The position of the News on this subject is in accord with the views of the friends of protection, although the News wrongly supposes otherwise. The manufacturers in the South who favor a protective tariff want that tariff to cover raw materials just as well as the finished product. Iron ore and coal, rice and sugar are just as much entitled to protection as pig iron, steel rails or anything else. Unwittingly the News affords a good reason for holding the tariff convention that has been advocated by the MANUFACTURERS' RECORD. We want to see such a convention, to be composed of representatives of all interests—agricultural, manufacturing and mining—that they may unitedly voice the protective tariff sentiment of the South. There would then be no excuse for such mistakes as the News has made in supposing protec-

tion on raw materials is not desired by the manufacturers of the South. Such a convention could do no harm; it might do great good. It would be a representative gathering of the foremost workers in the present development of the South; it would be such a gathering as the South has never had. The men who are developing her mines of ore and coal, those who are producing the pig iron, her cotton and woolen mill owners, her rice and sugar planters, and the representatives of many other interests, would for the first time meet each other. The city that is enterprising enough to secure this convention will have the honor of entertaining the most representative gathering of the business men of the South that has been held for many years.

Birmingham's Prosperity.

The prosperity of Birmingham seems to know no let up. Week after week adds to the list of important enterprises established there. The growth of that wonderful iron center is no less than marvellous, and the indications give promise of still more rapid development in the future. One of the latest enterprises is reported by the Birmingham Age as follows:

"About two weeks ago Mr. J. Hickson, of Bull street, Manchester, England, came to Birmingham, on the invitation of H. F. DeBardeleben, to examine some of the valuable coal lands of this section. Mr. Hickson is one of the most prominent geologists and mining engineers in England. He is the proprietor of numerous mines and mining operations in England, Scotland and Wales, and is also the owner of several iron furnaces, one of which is in Spain. He came to this State in the interest of an English syndicate, and has made a thorough investigation of the coal and iron lands around this section. He visited the Pratt Mines and was astonished at the magnitude of the works. He thought that the natural gas was as good as any in the country, and would be wonderful when developed. He reported favorably to his English associates, and the result has been the organization of a mining and furnace company with capital stock of \$1,000,000. The mines and furnaces will be located at Jonesboro, nine miles from Birmingham. The officers were elected, and H. T. DeBardeleben will be president and general manager. The stock is held by gentlemen from Charleston, S. C., who hold one-fourth, H. T. DeBardeleben, who holds one-half, and the English syndicate the remaining quarter. The company will establish a steel plant and will begin at once to open the mines and erect furnaces."

It is reported that Mr. H. E. DeBardeleben, of Birmingham, says that in five years he will be making more pig iron than the total production in that city at present.

THE Bulletin, of the Iron & Steel Association, says: "We have of late seen in several papers the intimation that a number of iron and steel manufacturers desire to see iron ore placed on the free list. In all our acquaintance with these manufacturers we know of but one person who takes this position, and that gentlemen is the Hon. Abram S. Hewitt."

The Advantages of Richmond.

In a very full description of the advantages of Richmond, Va., and its trade the New York Commercial Bulletin says:

Richmond occupies an admirable location as a railroad center and seaport. Located on the north bank of the James river, at the head of tide, the majority of ordinary vessels float to her wharves. The completion of the projected government improvements will give twenty-two feet of water from the city to the sea. The largest vessels now land at Newport News and West Point, both being in close rail connection, and considered as natural seaports of Richmond. The distance by water to the ocean is 127 miles. Her commerce is large and extends to all the important domestic and many foreign ports.

Her railroad facilities are excellent. The distance from Richmond to all of the principal Western points is less than any Northern seaport, with only one important exception, Philadelphia being nine miles nearer to Chicago. The city is a common meeting point for the railroad systems of the North and South Atlantic States.

Richmond is built on a number of hills, which gives great variety in the choice of location. The admirable system of sewerage is supplemented by every rain, and, as a consequence in cleanliness, the city is above the average. Good water is abundant, and the higher portion of the city, varying from 150 to 200 feet above tidelevel, insures pure and healthful atmosphere.

Beautiful parks are numerous, and commendable judgment has been displayed by converting into public parks a number of the promontories overlooking the river and extended views beyond. The educational facilities, public and private, are unsurpassed. The population is about 75,000, and is steadily growing. The system of electric lighting is in operation in the parks and principal streets.

As a manufacturing point Richmond offers many attractive advantages. The falls in the James furnish abundant water power, which could be made available to an extent second to no other place. Grain can be unloaded at the mill from all parts of the country, ground by water power and the product loaded into vessels for any part of the world with the smallest outlay and least handling.

As to steam power, the abundance of accessible coal on the railroads entering the city furnishes a good quality of that commodity at a small cost. The labor supply is also abundant, and is an important feature. The work in the tobacco factories is about all done by negroes, as they are considered most valuable hands for heavy work, as in the rolling mills, as stevedores, &c. The class of white mechanics or white women and girls in the factories where female labor is employed compares favorably with other places. Raw materials for almost any kind of manufacture are brought here at a minimum cost. The manufacturing concerns here are generally exceedingly prosperous, and new ones are constantly going up.

MANAGERS of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises, and needing machinery or supplies of any kind, will find it profitable to consult the advertising columns of the MANUFACTURERS' RECORD. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

Our Birmingham Letter.

The Iron Market—An Export Coal Trade, etc.

[Special correspondence MANUFACTURERS' RECORD.]

BIRMINGHAM, ALA., March 1, 1886.

If there be anything very new in the local conditions in respect of the production or movement of pig iron, I have failed to learn it. The recent freight advance to Northern and Northwestern points is still a sore point with our furnace men, but the general opinion now seems to be that the action of the Ohio River pool merely forestalls similar movements on the part of others, and that a general advance all along the line will make matters even again. Just at present the rates to Chicago would bar Birmingham iron out of that market if it cost to produce what iron in other districts costs. As the matter stands there is still a considerable flow of pig metal hence to Louisville, Cincinnati, St. Louis and Chicago. Eastward freights have not advanced and traffic with New York, Boston and Philadelphia is active. Quotations for pig iron, delivered at furnace, remain: No. 1 foundry, \$16.50; No. 2 ditto, \$15.50; No. 3 ditto, \$14.50; No. 1 mill, \$14; Grey Forge, \$13.75. Market firm and generally active, the Eastern demand being for foundry grades and the Western and Northwestern for mill irons.

In other iron lines the situation last reported continues. All of our shops and factories are working as hard and turning out as much as they can, and orders are piling up on their hands the while. General business is good if not flourishing, and building operations have set in for the spring campaign. Plans are nearly ready for the new hotel, to be called the Caldwell House, in honor of the enterprising president of the Elyton Land Co. Work on it will be commenced shortly. A number of new business blocks are projected and contracts are being let for most of them. Three new structures of the first class—large store and office buildings—will be ready for occupancy next week, and dwelling houses are springing up everywhere. Real estate shows a steady but not a feverish improvement both as to price and demand, and the sales of the past week have been quite satisfactory. The movement has been even better in mineral and timber properties. It is reported that Mr. H. F. de Bardeleben has sold his large coal and iron territory south of the city to an English syndicate, on private terms of course, but generally believed to be in the neighborhood of \$600,000. Should this prove really to be the case, and there is probably little doubt about it, the transfer will leave that phenomenal operator free to prosecute his long cherished plan to reach a short cut to tidewater from the southern end of the Warrior field at Tuscaloosa. His idea is to build a railway from the point named down the Cahaba valley—all down hill—to Selma, on the Alabama river. He could doubtless make it in less than 100 miles, and from Selma to the Gulf there is uninterrupted and reliable navigation the year around. That would settle the question of cheap coals at Mobile for all time to come, and furnish the basis for a vast export trade in Alabama coals from that port. It is also thought that a road will be built from Tuscaloosa to Woodstock, to meet the Birmingham Mineral Railway. The Georgia Pacific extension is being pushed rapidly through the best part of the coal territory in Walker county, and the Memphis, Birmingham & Atlantic line is coming along as fast as possible.

The present pressure upon the productive capacity of the furnaces naturally creates an active demand for coke, and generally serves to bolster the coal mining interest. The coal market throughout the entire Mississippi valley is greatly improved and con-

stantly growing better. Atlanta, Montgomery, Jackson, Selma, Pensacola, Mobile and New Orleans are continually increasing their consumption of Birmingham fuel, and the effort to reach out for trade over the Gulf becomes monthly more promising. The other day the papers announced that the first cargo of Alabama coals had been just sent out to Cuba as an experiment, to test the capacity of that market to take our product. The statement was a mistake to some extent, because Alabama coals made their debut in the Ever Faithful Isle years ago. I think it was in 1874, or thereabouts, when Col. Sloss, of Birmingham, was at the head of the South & North and Mobile & Montgomery Railways. He then controlled the only direct line from the coal fields to tidewater. In those days good coal was not the cheap commodity it has since grown to be. The government was paying \$8 per ton, or such a matter, for cargoes delivered in the harbors of Mobile and Pensacola, and black diamonds amounted to an expensive description of jewelry at all Gulf ports. Col. Sloss conceived the idea of an export trade to the West Indies, and he loaded a ship with coals and sent it over to Havana. The new fuel was received with the most flattering consideration by the Havanese, and the immediate result was that Col. Sloss received orders for 15,000 tons to be sent by return mail, so to speak. At the time I write of I think the total annual production of the Alabama mines was not to exceed 20,000 tons, and the orders could not be filled. Some time afterward the Colonel gave his attention more particularly to furnace developments, and the export coal trade project was allowed to lie dormant until recently. The propositions of Mr. de Bardeleben and others appear likely to put it on foot again, and there does not seem to be any good reason why the object should not be realized. The present daily output of the mines in this district is estimated at: Pratt Coal & Coke Co., 2,500 tons; Coalburg Coal Co., 1,500 tons; Henry Ellen, 600 tons; New Castle, 500 tons; mines at Warrior, 600 tons; Helena, Montevallo and Blocton, 600 tons; total, 6,300 tons.

The energetic enquiry for iron ore lands, heretofore noted, continues unabated, largely because there is little of a desirable nature wherewithal to satisfy it. The Alabama Great Southern connection had some of the last in the market near town of the sort that would rate "A1 at Lloyds," and it was all or nearly all snapped up last week at prices considerably above anything offered or thought of last year. It is now a common enough saying that good ore land anywhere around Birmingham is cheap at \$100 per acre. Prices actually realized have been much below that figure, but purchases have been made for actual and speedy development, and the sellers have been corporations to whom development is the principal and the price of the property a very secondary consideration. The L. & N. land department still holds some desirable iron land, but only for sale for immediate development. Several choice lots belonging to private parties have changed hands and farther sales are reported as in negotiation. In addition to the quantity of ore consumed by our own furnaces, the Birmingham mines are shipping from 300 to 400 tons daily to South Pittsburgh, Cowan and Chattanooga, all of which points depend upon this locality for their ore supply.

Mr. Sam Thomas, of Pennsylvania, is represented here this week by a prominent member of his family, who is doing the developments of the neighborhood with a party of friends from the East. The regular annual statement is being circulated that Thomas *pere* is now about to establish several furnace plants in connection with the huge block of coal and iron property owned by him here. While it is true that all the

current conditions would be favorable to such an enterprise, the same report has been around so often that old residents have grown incredulous. It is less doubtful that de Bardeleben's desire to place another large furnace by the side of the Mary Pratt this year may be carried into effect, and it is pretty certain that the Coalburg Coal Co. will erect a couple of stacks to utilize their slack if for no other reason. The Williamson, under way, and the two projected by the Pratt Coal, Coke & Iron Co., plant for which is being made here, are to be listed as certainties. Five or six new furnaces may almost surely be counted on as additions to our industrial artillery this year.

Southern timber lands are sharing the general attention now being accorded to the resources and opportunities of the section. In this State the leading enquiry is for long-leaf pine lands, of which some fine areas still exist, owned by and near the lines of the Louisville & Nashville and other railways. There are fine tracts of this desirable wood in Mississippi also, and all such property is coming into demand very rapidly. Three dollars will buy timber land in this region, the like of which in Michigan or Wisconsin would be worth many times that sum. I hear that they are asking \$100 per acre for choice pine land in Michigan!

The headquarters of the Alabama Great Southern Railway have been moved from Chattanooga to Birmingham.

I am very much afraid that the Morrison bill has gotten away with us! Its intelligent provisions appear so palpably in antagonism to the interests and prejudices of every section and industry, that I find our friends in this region rather confident that it has dug its own grave. This confidence, while perhaps well founded, is exceptionally dangerous. The snake may have been scotched and cut in pieces, but the pieces might grow together again if left alone! The bill offends all American interests, but it is no doubt framed to please Messrs. Cooper, Hewitt & Co. and the British manufacturers, merchants and bankers. That being the case, the MANUFACTURERS' RECORD and all other native influences ought to keep on hammering at it until it is finally killed and buried. Neither should the press or the people of the South ever let up on the outrageous internal revenue system until that enemy of home industry and obnoxious relic of the civil war shall be abolished and fled away with the other things that have made us from time to time wonder whether this is such an intensely free and people-governed country after all.

G. B. WEST.

Progress of Coal Mining in Alabama.

A correspondent of the Coal Trade Review writes of the progress of coal mining in Alabama as follows:

In 1871 the writer visited Alabama, and there was but one organized coal mining operation in the State, and that was near Montevallo; there was not a mine near Birmingham, and in fact Birmingham was a thing of the future. Now there are three large mines in the lower Cahaba field, a dozen or more in the vicinity of Birmingham, and on the L. N. & G. S. R. R., north of that city, and a number in the Coosa field.

The first coal mined in the State was undoubtedly on the Warrior river, where it was dug out of the bed of that stream or from its immediate banks, and put in flat boats to be carried to Mobile. The coal was mined in low water and taken down on ties. I know a ford on that stream whereat the water in summer is about 10 to 12 inches deep in the immediate roadway, which is a bed of coal, while on either side the coal has been so taken

out as to make the depth of water $3\frac{1}{2}$ to 4 feet greater.

The first attempt at systematic mining was in 1853, on the Cahaba river, just below the Big Shoals. At this point three seams of coal cross the river within a few hundred feet of each other at a dip of 20 degrees on the west side. A company formed of Montgomery capitalists commenced operations there, but losing all the barges but one they became discouraged and abandoned the enterprise. It is stated that some coal from this region, which was sent to Montgomery, sold there for \$6 per ton.

In 1855, a second company was formed and operations commenced near Montevallo, on one of the seams which exists there in a nearly vertical position. A slope was driven down 175 feet and drifts run off, and rooms turned. Like all those seams the thickness was irregular, ventilation very difficult and a number of serious accidents occurred, and in the early part of 1860 the mine was abandoned. The largest daily shipment made was 33 tons. It was shipped to Selma by the Selma, Rome & Dalton Railroad, now the Alabama Division of the E. T. Va. & G. R. R.

The most successful mining operation of this region has been the Montevallo Mine. Coal was taken from this seam as early as 1836, and it was worked largely during the war. Systematic operations were commenced in 1870 by Col. A. B. Moore and Col. Black, two gentlemen from Indiana. It has been in continuous operation since. Numerous openings were made all over the Cahaba field during the war, much coal gotten out and a great deal of coke made for the government foundry at Selma. In some instances coke and coal were hauled 15 miles to the railroad.

The first systematic operation in the Warrior field was commenced at Warrior Station, on what was then the South & North Railroad, now the L. N. & G. S. R. R., by Jos. T. Pierce, on a seam of excellent coal, but only 2½ feet thick. In 1873 the Newcastle Coal & Iron Company commenced operation on the same road, and two more mines were opened at Warrior Station. In 1874 still more were opened, but it was not until 1879 that Mr. DeBardeleben threw his capital and energy into this field, and by the opening of the Pratt Coal Mines marked out a new era in Alabama's industrial history and progress.

This is what Alabama coal mining was, its progress, and in brief its present. It is a record unsurpassed even by any Western State, and while much of the progress has been due to the liberality of the Louisville, Nashville & Great Southern Railroad Company, yet it may truly be said that the far-seeing president of that road only took hold of advantages which nature almost forced upon him, and that he could not avoid seeing the value to accrue to his road by their development. Yet there are so many railroad presidents who would have passed them by in thirst for cotton bales, that the helping acts are much to be commended.

THE MANUFACTURERS' RECORD, of Baltimore, Md., the foremost trade journal of the South, recently entered upon its ninth volume. About three years ago it came into the hands of its present owners, and at that time contained sixteen pages. It now contains 36 large pages every week, and they still talk of coming up higher. It is the most earnest and persistent exponent of the South's industrial progress and capabilities which that section has, and its marvelous growth and increase of patronage is but indicative of the increasing prosperity of the section it represents. It should be in the hands of every manufacturer in the South, large or small.—McMinnville, (Tenn.), Standard.

THE BALTIMORE MANUFACTURERS' RECORD has entered upon its ninth volume. It is doing yeoman service for the South in keeping all Southern industries and improvements prominently before the public.—Brenham (Tex.) Banner.

Jewett's Water Filters.

The importance of pure water for family use is attracting the attention of scientific men, physicians and health officers all over the civilized world, since it has been proven to a certainty that the use of impure water is frequently the origin of many dangerous diseases, and constitutes a fearful ally to cholera, typhus and similar plagues. All newspapers, professional or not, eagerly discuss the question of pure water; and textbooks on physiology, lately introduced in our public schools, state that malarial fevers, diseases of the bowels, the kidneys, the bladder, etc., very often are the consequences of bad drinking water. In thickly populated districts it is next to impossible to obtain pure water, the rivers being polluted by refuse matter from factories and workshops, from drains and sewers, and from adjacent dwellings. The water supplied by the water works is, for the same reason, more or less impure. Wells soon become charged with decayed vegetable matter, and with foul, disgusting effluxions from stables, cesspools and sewers. In our large cities a great number of wells have been filled up by order of the health authorities for that very reason. These insidious, poisonous ingredients do not always announce their presence by an unpleasant smell. In many parts of this country people go on drinking water manifestly impure—muddy, discolored, bitter and nauseous—because "they can get nothing better." A good filter will give them something better, however, and save them unpleasantness and sickness. That such water, which is unfit to drink, is "good enough to cook with," is a popular mistake. Mineral and vegetable poisons are seldom eliminated by boiling only. They remain and infect whatever has been boiled in the water. An observant housekeeper will frequently notice that even pure, innocent looking water emits a "bad smell" when heated. Such water is not fit to drink or to cook with.

Statistics, as offered by the health authorities, show a fearful increase in the rate of sickness and death in such districts where the water is bad. The authorities in many places have, therefore, thought it their duty to devise some plan for purifying water on a large scale for the use of entire communities. In England, for instance, a royal commission has for many years been experimenting with huge filters of earth, sand, gravel, marl, clay, etc., but so far with indifferent success. In this country the efforts of the "water commissioners" to purify the water have been confined to measures preventing carcasses of cats, dogs, horses and human beings from clogging their water-mains. And so it happens that a careful householder will have to depend on a family filter to supply him and his family with pure water.

A great many so-called filters are merely strainers, removing from the water the visible "dirt," but leaving therein the more dangerous mineral solutions. A severe test of filters is the water of the Cape Fear river, in North Carolina, whose water is pretty clear, but of a reddish color and with a bitter taste. None of the strainers, sold under the name of filters, can, it is said, remove either color or taste from that water, but it is claimed that the Jewett Filter can do it.

The following words are found in Appleton's Cyclopædia, and we find them frequently quoted and corroborated by physicians and chemists:

"Charcoal, by the possession of these properties of absorption, decomposition and combination, is eminently fitted as a filter for the purification of water, removing from that liquid the color, odor and taste of its impurities by oxidizing and recombining them into other and inoffensive substances."

The long-tested and proved reliable filtering medium is natural gravel and sand, combined with expressly prepared re-carbonized charcoal.

It has frequently been suggested by parties experimenting with other filtering materi-

als than charcoal, that the charcoal beds in the filter must sooner or later become foul or clogged by organic matter, sand, clay, etc., present in the water. The manufacturers of the Jewett Filter state that during the thirty-five years they have been manufacturing



JEWETT'S WATER FILTER.

filters no case has been brought to their notice substantiating these "suggestions," and that, probably, for the simple reason that the construction of their filter does not allow any "dirt" to reach the filtering bed.

Referring to the cuts herewith, the sectional view shows: A—receiver for water; B—first chamber for white gravel; C—space for sediment deposit, and faucet to draw off same; D—second chamber for white gravel; E—double sponge cups; F—main charcoal filtering bed.

The water is poured into the general receptacle A, from which it passes through the



SECTIONAL VIEW.

perforated cap into the gravel bed B. At the bottom of this gravel bed is an open space, C, where whatever "dirt" not caught in the gravel will settle, to be drawn off by means of the small faucet at the back of the filtering vessel.

Through small apertures at the bottom of the partition between the gravel beds B and D, the water passes into the latter, where it is driven upwards and through the cup E, which is filled with sponge and cheese cloth, the two latter unflinchingly catching up any faint traces of "dirt" that by any possibility may remain in the water.

The manufacturers claim that at this stage of proceedings the water is fully as pure as any gravel or stone filter can make it. And then the water passes through openings at the top of apartment E, into the filtering bed proper F, consisting of layers of gravel, sand and re-carbonized charcoal. This bed surrounds the gravel beds B and D, and is of

sufficient capacity to thoroughly purify the same quantity of water as any other filter of its size.

Thus the Jewett new patent filter not only removes all the visible or tangible impurities in the water as thoroughly as gravel or stone filters, but also renders the water chemically pure, which charcoal filters alone can do. These filters are made by the John C. Jewett Manufacturing Co., Buffalo, N. Y.

The Opening Months.

Two months of the new year have passed. The business situation generally throughout the United States is perhaps not altogether what many people in the various sections hoped for, but it is, on the whole, such a decided improvement upon the conditions that obtained at the corresponding time last year that there is, to say the least, great ground for encouragement. During the closing months of 1885 there were indubitable symptoms of a rapid return of prosperity to the whole country. The hopes then born have been not quite disappointed but they have not been fully realized. For this it is probable that we ought to thank the fruitless agitation of the silver and tariff questions in Congress.

While complete confidence does not yet appear to be everywhere restored, the condition of Southern Industries, and the important movements reported, justify the conclusion that on this side of the line the upward turn has come. The mineral regions tributary to New Orleans are the scene of activity never excelled in any part of the Union in the most prosperous times. The Georgia Pacific Railway is extending its line across the Warrior coal fields and needs only to close a short gap in order to strike the Mississippi river. Work has been let on the Memphis, Birmingham & Atlanta Railway, and the season's operations will be pushed well toward accomplishment of that important project. A new railway is projected from Tuscaloosa to meet the Birmingham Mineral Railway, and a line from Tuscaloosa to Selma, down the Cahaba Valley, is regarded as among the developments pretty certain to begin this year. All these things point to the determination of the coal capitalists to find additional outlets for the product of the great Alabama fields. The development of the coal mining industry in the South has been really phenomenal, and the statistics are not without suggestiveness as to the shifting of the centers of industrial activity in the United States. Leading operators in the Southern coal regions are quite convinced that means will be found to flood Southern seaport markets with Southern coals at prices low enough to defy outside competition.

A number of new iron furnaces and at least one steel plant are likely to be added to the productive capacity of Alabama during 1886. Similar developments are promised in Tennessee, and in Kentucky there is likely to be widespread activity in railway extensions and the opening up of the rich coal, iron and timber district of Eastern Kentucky. The inquiry for timber lands in the lower Mississippi Valley is on the increase, and during the next few weeks it is probable that a good deal of desirable territory of that description will be bought on Northern account. Pine lands in Michigan and Wisconsin are growing so scarce that it is said that good white pine areas now command \$100 per acre.

When we consider the prices at which our magnificent long leaf pine and our cypress lands are to be had, their attractiveness to investors in timber is not to be wondered at. New furnaces building, and to be built, new railway and mining operations, and all the minor developments following closely on the heels of these, will bring an important accession of capital and an enlarged consuming population to the Mississippi Valley this year. The results, which will be well

spread over the region, should be nowhere felt as beneficially as right here in the Crescent City, the metropolis of the country affected by the movements referred to. From any point of view the outlook for business and general prosperity seems bright enough. —New Orleans Times-Democrat.

A Word in Season.

[From Bulletin of Iron and Steel Association,
To the Editor of the Bulletin.]

DEAR SIR:—Just once let me say that many manufacturers do not seem to care to know how ably and unselfishly their cause is championed by men who have no personal interest in a single rate of duty, and who are actuated only by patriotic motives in exposing the sophistries and the falsehoods of free trade. How many manufacturers recall with grateful feelings the inestimable services of Dudley C. Haskell, who gave his life to the cause of protection in the Congressional contest over the tariff of 1883, or give a thought to the family he left behind him? Henry C. Carey to his dying day anathematized the manufacturers of this country because they gave him so little recognition for the services he had rendered them, and when this teacher of all our protectionist teachers died they raised no monument to his memory. Philadelphia, which owes so much to his unselfish services to protection, and so much to the services of his father before him, dishonors itself by forgetting him. Horace Greely was certainly, through the columns of the Tribune and in other popular ways, the most influential advocate of protection the country has ever had, and yet the Tribune never contained many advertisements from manufacturers, and sometimes and most frequently none at all. It contains none to-day. In a recent address at Boston Dr. John L. Hayes, the veteran Secretary of the National Association of Wool Manufacturers, said most truthfully that "the men who have done the most to advance the protective cause have had no material interest in the interests they have advanced." Carey had none, Greely had none, and Haskell had none; and I might mention many other influential advocates of protection who have had no direct interest in upholding this policy. But the rule has been to treat the influential and unselfish advocates of protection very much as Carey and Greely were treated in their lifetime, and as poor Haskell's services have been remembered. Those protectionists who have borne the heat and burden of the day have not usually received the recognition and the encouragement they deserved, many of them remaining poor all their days, while great interests have been built up by their fidelity, their industry and their sagacity. It is not right, it is not manly, it is not honorable, that these interests should neglect those who have unselfishly done so much for them. I can mention two or three men with national reputations and two or three other quiet but most effective protection speakers and writers whose voices are now mute and whose pens are idle because there is no inducement for them to further employ their time and strength in a work which is not even appreciated, much less rewarded. Those who are directly interested in the preservation of protective duties should have made it a part of their business to see that these self-sacrificing men were properly sustained, especially as the most deserving are usually the least inclined to push their claims or to organize methods of securing financial support. MANUFACTURER.

ADVERTISERS wishing to reach manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the BALTIMORE MANUFACTURERS' RECORD. We are always prepared to furnish proof of our claims as to circulation.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

ALABAMA.

Machinery for a 200-barrel roller mill for the Birmingham Roller Mill Co., Birmingham, Ala., has been ordered.

Blackshear Bros. will erect a large saw mill at Brewton, Ala.

It is stated that Mr. Woodward will establish a nail factory at Birmingham, Ala.

Gilmer & Merritt, Montgomery, Ala., are repairing a warehouse and will use it for a flour mill.

The Pratt Daniel Gin Co., Prattville, Ala., will put some additional machinery in their factory.

Carter & Harvey will erect a saw and shingle mill near Harpersville, Ala.

H. E. & J. Faber will fill up their factory at Prattville, Ala., with machinery for making checks, and put it in operation at once.

The Montgomery Soap Works, Montgomery, Ala., will enlarge their capacity.

A large saw mill is to be erected at Mobile, Ala.

The Montevallo Coal & Transportation Co., Aldrich, Ala., will hold a meeting April 5, to consider the question of increasing their capital stock from \$100,000 to \$300,000, for the purpose of enlarging their property and plant.

ARKANSAS.

E. R. Moffat has purchased material for a smelter which he will erect near Hot Springs, Ark.

The capital stock of the Ozark Mining Co., previously reported as organized at Little Rock, Ark., to open and develop mines near Bear, Ark., is \$5,000,000. J. J. Sumpter is president; Joseph P. Johnston, vice-president and Charles N. Rix, secretary and treasurer.

The Arkadelphia Lumber Co., capital stock \$50,000, has been chartered at Arkadelphia, Ark.

FLORIDA.

A company has been formed at Jacksonville, Fla., by W. B. Watson, Mr. Pence and others, to manufacture artificial stone. Will build a factory.

An ice and cold storage company has been organized at Sanford, Fla., with A. M. Thrasher as president, W. H. Haney, vice-president; W. A. Day, secretary and D. L. Way, treasurer. The necessary machinery is being made, and a building will be erected soon.

Mr. Drew is preparing to erect a saw mill near Lake City, Fla.

Southerland & Mann will erect a saw mill at Cotton Plant, Fla. The machinery has been bought.

J. S. & H. Harvey will erect a saw mill on the line of the Florida Railway & Navigation Co's road, between Sparr and Anthony.

The Mayo Ice Factory, Orlando, Fla., previously reported as damaged \$10,000 by boiler explosion, is to be rebuilt.

W. C. Middleton is erecting a saw mill in Florida, on the line of the St. Augustine & Palatka Railroad.

H. W. Beach and F. L. Pierce will start a broom factory at Tampa, Fla.

GEORGIA.

C. L. and D. S. Loyd, Atlanta, Ga., will re-establish their tobacco factory. Will purchase considerable new machinery for their factory in addition to their old.

An effort is being made to organize at Augusta, Ga., a company to manufacture artificial stone.

Ellis & Co. are erecting an ice factory at Macon, Ga.

Proposals will be received until April 26 for building a jail at Savannah, Ga.

The company previously reported as formed at Brunswick, Ga., by Robert Brice, of Tennessee, and associates, and members of the firm of Dodge, Meigs & Co., of New York, to develop phosphate lands, has been organized as the Georgia Phosphate Co., with a paid up capital stock of \$100,000. T. B. Meigs is president. 1,200 acres of land are owned by the company, and temporary machinery is being erected to test the phosphate. If satisfactory, permanent works will be established.

Rufus Carter & Co., Augusta, Ga., contemplate erecting a new building for their tobacco factory.

Lyndon Bros., Athens, Ga., will erect a patent medicine manufactory.

W. F. Chaplain has received the contract at \$33,236 for erecting a hall at Savannah, Ga., for the Odd Fellows.

KENTUCKY.

The Kentucky Wagon Manufacturing Co., reported last week as to be incorporated at Louisville, Ky., has a paid up capital stock of \$300,000. The purchase of 30 acres of land, on which to rebuild their works to increase their present annual capacity of 10,000 wagons, is contemplated. Stephen E. Jones is president.

Bills have been introduced in the Kentucky legislature incorporating the Grayson Springs Railroad Co., capital stock \$10,000; the Bowling Green & Northern Railroad Co.; the Ohio, Kentucky & Virginia Railroad; the Frankfort Street Railroad and the Proctor Coal Co.

Charles Mengle, Jr., will erect a large planing mill at Louisville, Ky.

The Crown Woolen Mills Co., capital stock \$50,000, has been incorporated at Louisville, Ky., with Silas F. Miller, as president; Buckner Board, secretary and treasurer and Harry L. Cooke, manager.

LOUISIANA.

A lumber company has been organized at Baton Rouge, La., to operate the Arbour saw mill.

The International Fibre Co., of New York, contemplate establishing a factory at New Orleans, La., with 5,000 spindles, to manufacture ramie fibre. A local stock company will be organized to build the factory.

The stock company previously reported as being organized at Monroe, La., to build a compress, has been incorporated as the Monroe Cotton Compress & Warehouse Co.; capital stock \$60,000. F. G. Hudson is president, F. Endom, vice-president; W. P. Renwick, secretary, and Lewis D. Allen, Jr., treasurer.

Russell & Trainor, New Iberia, La., have purchased the Washington Sash & Blind Factory at Washington, La.

The Consumers Ice Co., capital stock \$150,000, reported last week as chartered at New Orleans, La., with N. D. Wallace, as president, will erect a 100-ton ice factory, to be completed by June 1.

MARYLAND.

The Baltimore & Eastern Shore Railway Co., capital stock \$500,000, has been incorporated by E. E. Jackson, Thomas B. Taylor, John Robinson, T. Tunis and Joseph B. Seth to build a road from Eastern bay to Salisbury.

W. S. Grace, John H. Harrison and Robert Rolls will, it is stated, build a saw mill at Bozman, Md.

H. Werner, Baltimore, will put a new 60 horse-power boiler and engine in his brewery; J. Hart & Co. will erect a 60 horse-power engine and boiler at 22 Bowly's wharf; H. F. Hemingway & Co. will put a 60 horse-power boiler and engine in their packing house, and J. G. Kraft & Co. will put up a 150 horse-power boiler and engine on Cross street.

The Peninsular Fence Co. has been organized at Salisbury, Md., to manufacture wire picket fences. W. S. Gordy is general manager.

A company is being organized at Chestertown, Md., to erect gas works. C. L. Westcott can give information.

Edwin Sauerwein will erect two 4-story warehouses on Camden street, Baltimore.

MISSISSIPPI.

A company has been chartered to start a steam laundry at Jackson, Miss.

A bill has been introduced in the Mississippi legislature to incorporate the Mississippi & Louisiana Bridge & Railroad Co. of Natchez.

NORTH CAROLINA.

R. H. Foard and G. W. Martin will establish a large tobacco factory at Salisbury, N. C.

E. A. Snow & Co., High Point, N. C., are making arrangements to put a large amount of new machinery in their sash and blind factory.

Richard Williams, Morganton, N. C., has purchased and is erecting at his saw mill, near Bridgewater, N. C., machinery for dressing lumber and making laths.

Royster & Nash, Tarboro, N. C., have recently added new machinery to their fertilizer factory.

O. C. Farrar, Tarboro, N. C., will soon commence work on his \$50,000 hotel, previously reported.

A chair factory, on a small scale, is to be started at Monroe, N. C.

The compress of the Champion Compress & Warehouse Co., Wilmington, N. C., reported last week as burned, will be rebuilt at once.

Giersh, Senseman & Co. are starting a broom factory at Salem, N. C.

James H. Ramsay and Eugene Johnson will manufacture tobacco, at Salisbury, N. C., using the factory formerly occupied by Mr. Johnson. Some new machinery has been purchased.

J. S. Lockhart, whose tobacco bag factory at Durham, N. C., was reported last week as burned, will not rebuild, but will put new machinery in a building already erected.

SOUTH CAROLINA.

Bids will be received until April 1, by F. W. Kaufman, Lexington C. H., S. C., for building a jail at that place.

C. R. Harvin is rebuilding his saw mill at Manning, S. C., reported in this issue as burned.

John R. Patrick is building a flour mill at White Oak, S. C.

TENNESSEE.

D. W. Bethel, R. Snowden, A. D. Gwynne and others talk of starting a new company at Memphis, Tenn., to manufacture gas.

Henry D. Foust and Lee Jones have started a carriage factory at Alexandria, Tenn.

New machinery to be added to the bucket factory at Murfreesboro, Tenn., is being negotiated for.

It is reported that Alfred Webb, Chattanooga, Tenn., will enlarge his boiler works.

A stock company has been formed at Jasper, Tenn., to open and develop a coal mine. Byron Pope is president and Will Rogers is secretary and treasurer.

William H. Hearne, of Wheeling, J. J. Vandegrift and James I. Buchanan, of Pittsburgh, T. J. Vandegrift, of Jamestown, N. Y., J. H. Eakin, W. M. Dake, G. M. Fogg, Henry Sperry and W. C. Collier of Nashville, have incorporated at Nashville, Tenn., the Cumberland Natural Gas Co., capital stock \$50,000. The object of this company will be to drill for gas and pipe it to Nashville.

The Shoal Creek Iron Co., capital stock \$150,000, has been organized at Columbia, Tenn., with Thomas Sharpe, of Nashville, as president and Julius Sax, secretary and treasurer. 2000 acres of iron ore lands are owned by the company which will be developed, and an iron furnace will be erected either at Columbia or in Lawrence county.

There is talk of an ice factory being established at Memphis, Tenn.

C. R. Brown will build a large planing mill at Columbia, Tenn.

Brady & Shortell, Salem, Mass., will start a shoe factory at Nashville, Tenn., to employ from 50 to 100 workmen, if the citizens of that city will erect a suitable building and rent it to them.

J. R. Lamb, W. J. Oakes and J. T. Potter have formed at Columbia, Tenn., the J. R. Lamb Manufacturing Co.

Samuel J. Keith, Nashville, Tenn., will erect a \$7,000 building, to be used as a cracker factory.

M. D. Wimple and I. Meyers, of Herrick, Pa., are in Bristol, Tenn., seeking a suitable location for a tannery.

D. J. Chandler and J. W. Bye have formed a partnership at Chattanooga, Tenn., to manufacture bricks on an extensive scale. Ground for their works has been secured and the machinery has been ordered.

A flour mill has been erected at Flat Creek, Tenn., by Hix & Shoffer.

The capital stock of the Tennessee Range & Manufacturing Co., previously reported as chartered at Nashville, Tenn., to manufacture iron castings and machine work, is \$25,000. J. H. Zarecor is president.

The Tennessee Furniture & Chair Co., capital stock \$50,000, has been chartered at Union City, Tenn., with W. G. Moss, W. A. Posey, W. H. Gardner, A. C. Winsted, J. H. Whipple and N. Trissel as directors. The factories of the Union City Furniture Co. and the Union City Chair Co. have been purchased and consolidated. New buildings will be erected.

J. C. Cashen, previously reported as having made arrangements to build an ice factory at Tullahoma, Tenn., has ordered the machinery and will soon erect necessary buildings.

C. H. Melville, Chattanooga, Tenn., is building a machine shop.

LOCKWOOD, GREENE & CO. MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I., Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.

TEXAS.

Savage & Thomas have ordered machinery for a steam laundry which they will establish at Abilene, Texas.

J. L. Millsbaugh, W. E. Ellis and Frank Lerch have chartered at San Angelo, Texas, the San Angelo Ice Co. capital stock \$25,000.

It is reported that a stock company has been formed at Denison, Texas, to erect a box factory.

A \$25,000 company, has, it is said, been formed at San Antonio, Texas, to erect an electric light plant.

The Eureka Manufacturing Co., reported last week as organized at Palestine, Texas, with a capital stock of \$30,000, will manufacture cotton gins and presses.

\$3,500 have been subscribed towards starting at Rusk, Texas, a plow factory.

J. Elliot is erecting at Ogden, Texas, a two-story saw mill 48x174 feet, with a daily capacity of 75 M feet, and a planing mill 100x200 feet, with a daily capacity of 100 M feet.

Martin Heiman, it is stated, will start a carriage and wagon factory at Gainesville, Texas.

Byron F. Barry, S. R. Frost and John R. Miller have incorporated at Corsicana, Texas, the Corsicana Gas Light Co., capital stock \$50,000.

The Jefferson Lumber Co., Jefferson, Texas, are building a planing mill at Atlanta, Texas.

A stock company has been organized at Glen Rose, Texas, to establish a tannery. A site has been purchased and the contract awarded for erecting the building.

The Texas Tram & Lumber Co., Beaumont, Texas, have increased their capital stock from \$200,000 to \$400,000.

The contract for erecting a school building at Sulphur Springs, Texas, has been let to W. D. Hunsucker at \$15,000.

VIRGINIA.

J. Frank Mancha, J. E. Farrell, Rozel Jacobs, J. W. Paddon and others, Claremont, Va., will establish at that place an earthenware factory.

The Virginia Remedy Co. has been incorporated at Richmond, Va., to manufacture medicines, with Otho Owens, as president and George G. Minor, secretary and treasurer. The capital stock is not to exceed \$100,000.

Bills have been introduced in the Virginia legislature to incorporate the Powell's Fort Mining Co., the Appomattox Red House & Hot Creek Railroad Co., and incorporating the Newport News Dry Dock & Construction Co.

The contract for building a hall at Richmond, Va., for the Young Men's Christian Association, has been let to Wirt Chesterman at \$25,920.

Spigle & Layman, previously reported as to erect a canning establishment at Fincastle, Va., have ordered necessary machinery.

WEST VIRGINIA.

D. W. Weaver is erecting a factory at at Ronceverte, W. Va.

The West Virginia Natural Gas Co. have decided to purchase pipes at once and lay a pipe line from Wheeling, W. Va., to Washington county, Pa.

T. A. Hall, G. O. Smith, C. A. House, Henry Jones, Kay Hoge and others will incorporate at Wheeling, W. Va., the Nail City Oil & Gas Co. The capital stock will probably be \$100,000.

W. H. Abby has purchased a large tract of timber land at Leon, W. Va., and will erect a large saw mill.

BURNED.

The planing mill of Cotter & Steinbrink, Galveston, Tex.; loss \$18,000.

B. F. and G. T. Ingram's gin house at Marvyn, Ala.

The saw, grist and planing mill and gin of W. A. Davis, Halcyondale, Ga.

C. R. Harwin's saw mill, near Manning, S. C.; loss \$1,000. Will be rebuilt.

The saw mill of A. W. Deans, near Loango, Ala.; loss \$2,000.

The saw and grist mill of A. P. Thomas, Williamsburg, S. C.

Peter Kaylor's mill near Pleasant Valley, Va.

R. L. Irwin's saw and shingle mill, 6 miles from Montgomery, Ala.

Sharp & Ledbetter's ginnery and corn mill at Townville, S. C.

D. D. Withers' ginnery in Wilkinson county, Miss.

The saw mill of Davis & Deitzel near Pionta, Miss., damaged by explosion.

Ice factory of the Gainesville Ice Co., Gainesville, Fla. Loss \$10,000.

Two machine shops, containing planing mills; the wood shops and the wagon factory at the State penitentiary, Rusk, Texas.

A. G. Mounds' mill near Washington, D. C. Loss \$1,200.

D. Willett's mill near Gerardstown, W. Va.

Furniture and Chair Company.

UNION CITY, TENN., Feb. 27, 1886.

Editor Manufacturers' Record:

Tennessee Furniture & Chair Co., organized and chartered February 22, capital stock \$50,000, one-half paid in, have purchased and consolidated factories formerly owned by Union City Furniture Co. and Union City Chair Co. Will manufacture lines of common and medium furniture and chairs, and deal largely in poplar, gum and ash lumber. Will erect commodious new brick buildings. The directors are W. G. Moss, W. A. Posey, W. H. Gardner, A. C. Winsted, J. H. Whipple and N. Trissel.

TENNESSEE FURNITURE & CHAIR CO.

100-Ton Ice Factory.

NEW ORLEANS, LA., Feb. 26, 1886.

Editor Manufacturers' Record:

The Consumers' Ice Co. has been organized, and will be ready for work by 1st June; capacity 100 tons daily.

N. D. WALLACE.

Tobacco Factories.

SALISBURY, N. C., Feb. 27, 1886.

Editor Manufacturers' Record:

Mr. James H. Ramsy and myself will manufacture tobacco this season; will use the brick factory formerly used by myself; have bought new machinery. Messrs. Foard of Statesville, and Martin, of Leaksville, will build a factory here and manufacture tobacco this season. EUGENE JOHNSON.

Slate Mining Company.

BRISTOL, TENN., Feb. 27, 1886.

Editor Manufacturers' Record:

The charter for the Bristol Slate Mining Co. is on the calendar, and we think will be advanced in a few days and put through at this session of the Virginia legislature. The charter members are as follows: A. D. Reynolds, C. E. Finch, M. M. Butler, D. W. Frizell and F. H. Hendricks. The authorized capital is \$500,000. This property is located in Washington county, Va., twelve miles from Bristol, Tenn., and seven miles to nearest depot, on South Holston river. The quarry is opening up satisfactorily. It was first secured by lease, but the company has since purchased by a cash payment the entire earnings of the quarry.

A. D. REYNOLDS.

Rebuilding Cooperage Works.

CHATTANOOGA, TENN., Feb. 27, 1886.

Editor Manufacturers' Record:

I expect to commence rebuilding Monday. Factory burned 4 o'clock P. M. Saturday. Made chimney out of iron roofing, and was making barrels under a shed that was not burned, by eleven o'clock Monday morning. Will make 400 barrels this week.

W. ROSE.

A Compress.

NATCHEZ, MISS., Feb. 27, 1886.

Editor Manufacturers' Record:

Our organization is not yet completed. Have applied for charter of incorporation. Have contracted for a Morse 90-inch Cylinder Compress, to be placed here by Aug. 1, 1886. Capital stock \$50,000, with privilege of increasing same to \$500,000.

LOUIS BOTTO.

Saw and Grist Mill.

SPRING CITY, TENN., Feb. 28, 1886.

Editor Manufacturers' Record:

Will put in a saw and grist mill at Sheffield, Tenn., right away. It will be running in one month's time.

R. E. CONANT.

MONROE, N. C., Feb. 27, 1886.

Editor Manufacturers' Record:

A chair factory, on a small scale, is to be started here in a few days.

J. M. THOMAS.

ALDRICH, ALA., Feb. 26, 1886.

Editor Manufacturers' Record:

We have just completed a new lift on our slope. A special meeting has been called for April 5, to consider the question of increasing capital from \$100,000 to \$300,000, for the purpose of increasing property and plant.

MONTEVALLO COAL & TRANSPORTATION CO.

\$50,000 Natural Gas Co.

NASHVILLE, TENN., March 1, 1886.

Editor Manufacturers' Record:

The Cumberland Natural Gas Co. has been organized; capital \$50,000; stock all subscribed.

WM. C. COLLIER.

ATLANTA, TEXAS, Feb. 29, 1886.

Editor Manufacturers' Record:

Jefferson Lumber Co. is placing in a large planer at this place, and own 4 or 5 saw mills in and around this town.

J. B. O. FARRELL.

LOUISVILLE, KY., Feb. 26, 1886.

Editor Manufacturers' Record:

The Kentucky Wagon Manufacturing Co. has been incorporated by act of the legislature of Kentucky; paid up capital stock \$300,000. Capacity 10,000 wagons per annum. Are contemplating purchasing 30 acres of land in the suburb of city and rebuilding thereon, increasing capacity from 33 to 50 per cent., and capital to \$400,000 or \$500,000, having reached limit of production in our present plant.

STEPHEN E. JONES.

Rebuilding Saw Mill.

MANNING, S. C., March 1, 1886.

Editor Manufacturers' Record:

I am now putting in a new saw mill outfit, with a capacity of about 15 M feet a day.

C. R. HARVIN.

Tobacco Works.

ATLANTA, GA., March 1, 1886.

Editor Manufacturers' Record:

We expect to commence the manufacture of tobacco in Atlanta by the first of May.

LOYD & BRO.

MINING NOTES.

By T. K. BRUNER, Salisbury, N. C.

THE STEELE MINE,

in Montgomery county, so long idle, has, as recently stated, become the scene of great activity. The property was purchased a short time since by some New York gentlemen, and under the influence of their energy and capital, the appearance of the property has undergone much change for the better. A stamp mill is in course of construction. By April 1st it is expected to be in position and in activity. The mine is to be thoroughly equipped with hoisting machinery and all necessary appliances for properly treating the ore.

Few mines have produced ore so rich as has been found in the Steele. Ore has been taken out of this mine worth as much as \$2,500 to the ton. At one time a "streak" of free metal, nearly one-fourth of an inch thick, was discovered. The product was as good as a mint while this streak lasted. A piece of ore taken up just after a "blast" had been found to be held together by the gold, though completely fractured by the discharge. The ordinary ore is complex, carrying gold, silver, copper and iron, and is represented by free gold, galinite, copper and iron sulphide. The Steele has never been worked to any great depth, and it is expected that very rich ore will reward the labor now going on.

COGGINS OR APPALACHIAN MINE,

also before mentioned in the MANUFACTURERS' RECORD, is one of the properties from which a great deal is expected. It is in the hands of practical Englishmen, who are determined to get all there is to be gotten out of the mine by the use of the most approved methods. The property, from present indications, will astonish the mining world by its output, and will tend to greatly increase interest in this section.

The lode is traceable for more than two thousand feet and is from seven to fifteen feet in width. The ore is quartz and talcargillaceous slate in a matrix of Huronian slate, the geological formation of the district. Tests on both stamp and chillian mills have been satisfactory in indicating a light grade of ore. Some running as high as \$25 to \$28, and even higher, to the ton. With modern machinery, such an ore body must yield immensely. The deepest shaft is only down some 70 odd feet, and the two other drafts do not exceed 50 feet in depth, yet they all show the same excellent quality of ore. With even these shallow shafts, the amount of ore in sight is amply large, even if worth only 5 to 8 dollars to the ton, to prove the place a veritable bonanza! Prospectors have discovered two other smaller veins bearing similar ore, but of even greater richness. Some of this ore carrying free gold visible to the natural eye.

Improved hoisting works have been erected, and also some dwellings for miners, smithing shops, &c. The main, or 70 foot shaft, before mentioned, is being sunk, and when sufficient depth is attained, levels will be run each way for the purpose of demonstrating the width and continuity of the body of ore at such depth.

The company have provided for the erection of a forty-stamp mill, which will only be about one-fourth as large as the ore body will carry. In fact, two hundred and fifty stamps would be little enough for this property. But when the mill is in position and the mine in full operation—which will be some time in the spring or early summer—extravagant returns will be expected.

IN RANDOLPH COUNTY,

the owners of the Urrharrie mine have shipped some ore North, for what purpose is not stated, but it is said to be a fine mine, and the ore supposed to be of good grade. As an indication that the above is true of the mine and ore, they are now making arrangements to put up all necessary machinery used in first-class mines, and practical operations are to be begun at once.

The Winningham mine, operated by Messrs. Horne & Bartrum, has seen many changes since they took hold. Their stamp mill was started a week ago under favorable circumstances, and is now running day and night. The property is highly spoken of.

Robt. Shell, Esq., who lives near Glenburnie, P. O. in Caldwell county, has discovered a rich mica mine on his land.

The Brush System For Arc and Incandescence Lighting.

It is freely conceded that the electric light is as essential to progress and commerce as are the telephone, telegraph and railroad. No modern invention has made more rapid strides in popularity or necessity, and any city or town within the bounds of civilization which, in a brief time, fails to adopt the electric light will be looked upon in the light in which it would be viewed if it had neither telegraph nor railroad.

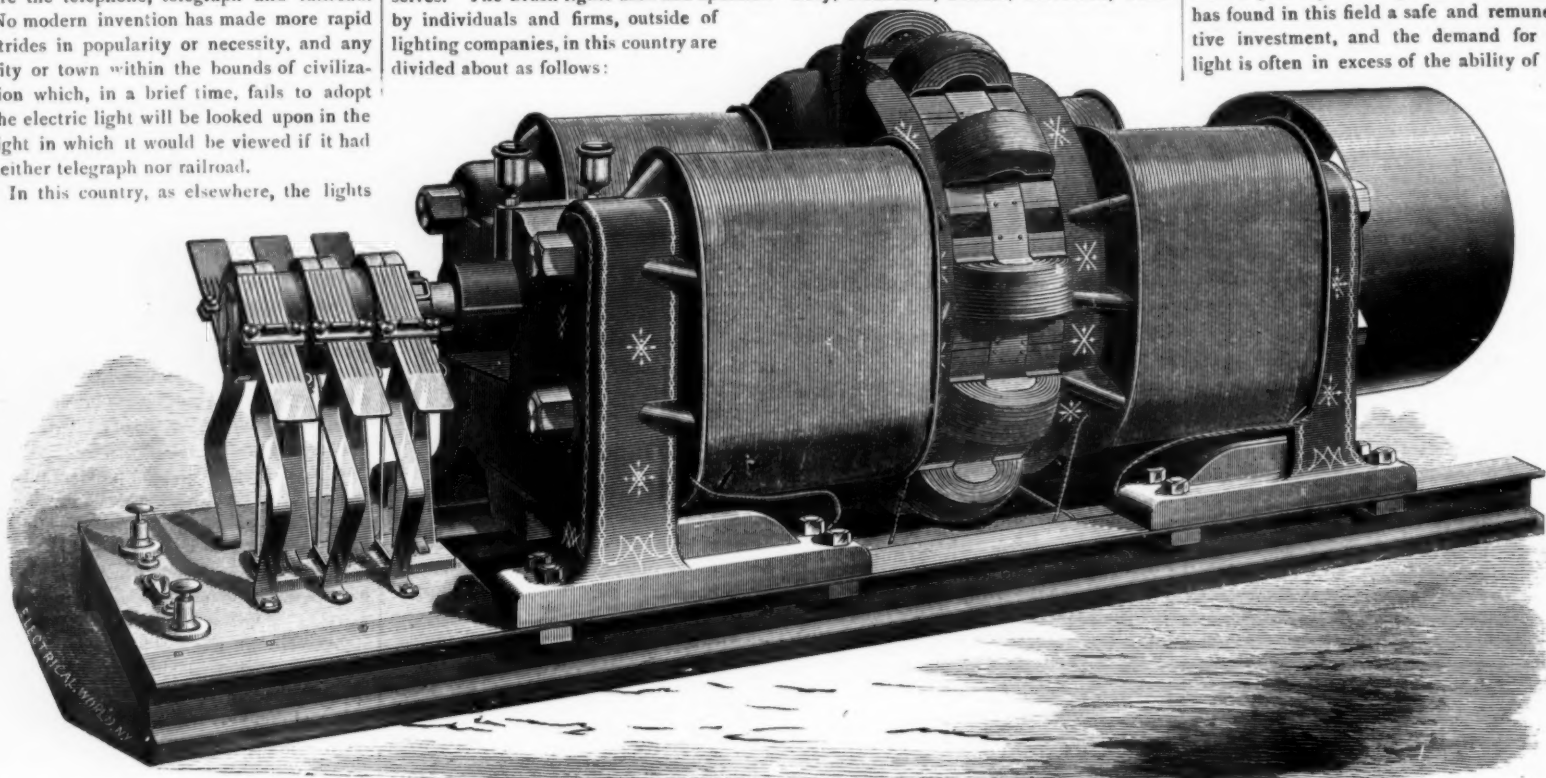
In this country, as elsewhere, the lights

Brush Electric Light Companies have also been organized in nearly all large cities in this country to introduce this light with a view to renting to individuals who have not the necessary power to produce it for themselves. The Brush lights used and operated by individuals and firms, outside of lighting companies, in this country are divided about as follows:

are established contracts have been made to light the public streets, and in many of them there is not a street gas-jet left burning.

Most of the larger cities, including New York, Boston, Philadelphia, Baltimore, Albany, Rochester, Buffalo, Cleveland, Pitts-

Many cities are using the tower system—Detroit, Evansville and other cities, large and small, are now wholly or partially lighted by this method. The number of electric lighting companies is steadily increasing from day to day. A large amount of capital has found in this field a safe and remunerative investment, and the demand for the light is often in excess of the ability of the



BRUSH DYNAMO-ELECTRIC MACHINE, FOR ARC LIGHTING.

are used by cities and towns for the lighting of streets, parks, public buildings, etc.; by railroad companies for the lighting of their stations, switch-yards and shops; by manufacturing concerns, of every description, for lighting their mills, factories, shops and yards, and by ocean, lake and river steamers in the varied operations of navigation, loading, making landings, unloading and other work. Mining operations of all kinds are carried on by the aid of the electric light, and there are few departments of industry or labor in which this method of artificial illumination has not already occupied the field and demonstrated its success. The Brush



TOWER LIGHTING IN CLEVELAND.

system of electric lighting is complete in itself. All the apparatus necessary to the most elaborate installation is manufactured by this company. The various devices necessary to a complete system were made for each other, and the highest degree of simplicity and efficiency has been reached. The dynamo-electric machine, the automatic current governor, the arc lamps, the copper-coated carbons are all covered by foundation patents granted to Charles F. Brush, the inventor. The Brush system is now in regular and practical use in all the countries of Europe, in Egypt, India, Australia, New Zealand, China, Japan, Mexico, and in South and Central America.

Rolling mills, iron and steel works, machine shops, etc.	2,350
Woolen, cotton, linen and silk factories	3,100
Large stores	1,050
Parks, docks, summer resorts, etc.	850
Mines, smelting works, etc.	325
Lumber and saw mills	410
Railroad companies	850
Hotels	450
More than 100 steamers, using	310
Factories and establishments of various kinds	3,700

In many cities where Brush Companies



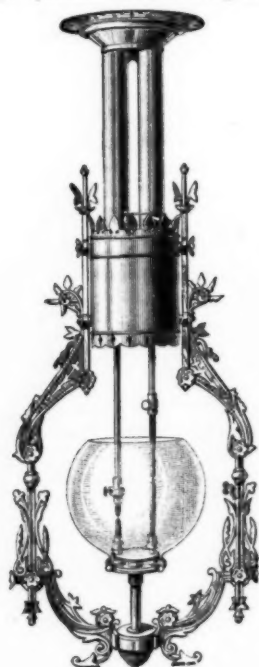
TOWER LIGHTING IN LOS ANGELES, CAL.

burgh, Minneapolis, New Orleans and San Francisco, use a very large number of Brush Electric Lights for street lighting—in some cases as many as four or five hundred. It appears to be only a question of time, and a very short time at that, before all the large cities, and the majority of the smaller ones, will light their streets exclusively by electricity.

company to furnish it.

The efficiency, durability and simplicity of the Brush machine are well known. The new armature, invented by Mr. Brush, has very largely increased the efficiency of the machines. This armature gives better ventilation and greater security against the dangers of overheating.

Owing to its great power and brilliancy, the Brush light is especially adapted for use in large spaces. Manufacturing establish-



BRUSH ARC LAMP.

ments are now using a vast number of these plants, and are ordering them almost daily. The ease with which any mechanic can take care of the apparatus, the great economy over gas and even oil, and the vastly better light, commend the system to manufacturers and others needing plenty of light of the best quality. The complaints of workmen, regarding heat and vitiated atmosphere where gas is used, are unknown in establishments using electric lights. Woolen, cotton, linen and silk factories find the electric light most desirable for distinguishing colors, and for

pany,
tration
The
photog
lamps,
various

producing fine work at night. Dry goods establishments find the same advantages. In almost all large spaces the electric light is the most economical of artificial illuminants.

Twenty-five different styles of arc lamps are now manufactured by the Brush Com-

pany, some of which are shown in the illustrations. These include focusing lamp for use of photographers, head-light and dye-house lamps, hand-lamps for search-lights, and various plain hanging, semi-ornamental and

ornamental lamps for use on ordinary lighting circuits. The automatic lamps are very simple in construction, containing no clock-work or wheel-gearing of any sort. They burn with a steady, white light, and time has proved them to be reliable.

The electric arc light is unquestionably the most economical and effective means of illumination yet produced, when the problem relates to outside lighting, such as streets and parks, or the lighting of large interiors. The field for incandescence lighting is, however, even larger. Small interiors, office buildings, hotels, houses, steamers, mills and factories, equipped with small and intricate machinery, require the old facilities of gas-lighting combined with the great advantages of the electric light.

The superiority of the electric light over gas or oil has met with full and public recognition. It secures freedom from impure and over-heated air, from the moisture and noxious vapors produced by illuminating gas, which are unhealthy as well as destructive of fabrics and decorations of all sorts; it affords safety from fire and yields

light. This problem is now satisfactorily solved.

Accurate measurements of the power absorbed by the Brush 150-light machines, conducted at Philadelphia by the Westinghouse Machine Company, in 1884, gave a result of about 10½ standard lamps per horse-power. Later measurements of the larger machines have shown as high a result as 11½ lamps per horse-power.

This remarkable efficiency, and the great durability of the lamps, combine to reduce the cost of maintenance enormously.

The number of plants of the Brush incandescence system is increasing very largely as its advantages become more widely known. Every department of incandescence lighting has been fully covered. The lights are burning nightly in hotels, theaters, newspaper offices, steamers, mills, and factories of all descriptions, office and public buildings, and private dwellings, throughout the entire country.

The Brush Dynamo Machine for incan-

descent lighting is entirely self-regulating. Its great advantage is its perfect automatic action in controlling the lamps without any resistances, regulators, or other outside devices, which are very wasteful of power.

The first cost of an installation is thus largely decreased, and the ease and economy in operating are greatly enhanced.

The machine is built to operate lamps of 16 candles, and 8 candles each—the 16-candle lamp being the standard. Thus the F-5 machine for 300 lights will maintain 300 16-candle lamps, 600 8-candle lamps, 200 16-candle and 200 8-candle lamps, or any other combined numbers up to its limit, allowing 2 8-candle lamps in place of each 16-candle lamp. Lamps of higher power, up to 150 candles, can also be used on the same circuit.

With the dynamo machine running at a uniform speed, any number of lights, from one up to the maximum number, may be turned on or off without the employment of any regulating devices, the automatic regulation of the machine itself being faultless. The extinction of a single light shows immediately a corresponding saving of power.

The uses of the dynamo electric machine are by no means confined to the field of illumination. In the electro-deposition of metals it has always found extensive employment. It is also used successfully in telegraphy and for the reduction of refractory ores.

But there are other and still vaster fields which remain almost untrodden. The Brush Electric Company is now actively engaged in developing the Brush System of Electric Distribution of Power. Gas, water and steam are now conducted through systems of pipes to great distances and there utilized. With far greater economy immense power in the form of electricity is conducted in small copper wires for distances of many

miles, and at intervals transformed and utilized as light.

In the system of lighting the lamp is the electro-receptive device whose action converts the electric energy into light. In the distribution of power the conditions remain practically the same. For the electric lamp we have merely to substitute the electric motor, which converts the electric force into mechanical power, available for almost any purpose for which steam is now applied.

There are hundreds of establishments in all large cities that use steam engines and boilers under great disadvantages. The first cost is great, and the expenses of maintenance, including oil, coal, wages of engineer and fireman, especially where small powers are required, make the present sources of power very uneconomical. The dust and dirt often make them undesirable. When these consumers of power begin to understand that they can obtain their power with the same ease and facility with which they now obtain their water, gas or electric light; that



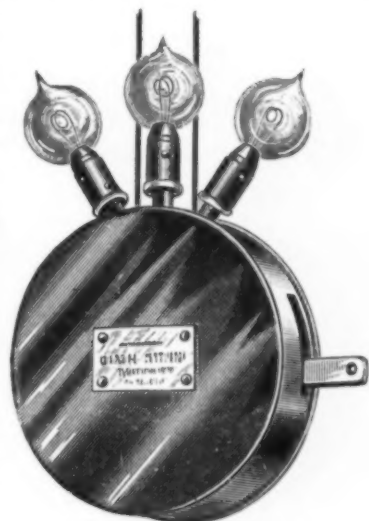
LAMP.



HAND LAMP, FOR TORPEDO SEARCH LIGHT.



ELECTROLIER.



MULTIPLE-SERIES SYSTEM.

pany, some of which are shown in the illustrations.

These include focusing lamp for use of photographers, head-light and dye-house lamps, hand-lamps for search-lights, and various plain hanging, semi-ornamental and

a steady, brilliant light, which shows everything in its true color, like sunlight.

But the problem before electrical engineers, working in the field of incandescence lighting, has been not simply to produce a good light, but also to produce an economical

they can start their machinery, elevators, ventilating fans, printing presses, etc., by the simple turn of a switch, as they now start their light by the turn of a key, the result is unquestionable. The distribution of power will be an immense boon to the public and will be welcomed accordingly.

The most important advantages claimed for the Brush system of electric lighting are:

1. Safety to life and property.—With the Brush Electric Light Apparatus, and wires

properly insulated and managed, the safest artificial light known is possible, and it is pronounced to be so by competent insurance and scientific experts. It is stated that not one conflagration has been attributed to the Brush system. 2. Economy.—It is said to be the cheapest illuminator known. In the majority of cases it is furnished at a much less cost than the gas or oil it displaces, fur-

nishing at the same time a greatly increased amount and better quality of light. 3. Perfect control.—In public street lighting the lamps may be turned on or off from the central station; thus a whole city may be lighted instantaneously. The lights in private residences or factories may be arranged so as to be controlled from one point, or each light may be independent of all others. 4. Pure air.—It does not vitiate the atmosphere as do gas and oil, and is odorless. 5. No heat.—Little or no heat is given off. 6. Cleanliness.—It does not generate smoke or other impurities to destroy pictures, paper, and other decorations. 7. Colorless.—Being white, like sunlight, the difference in the most difficult shades of color is clearly seen, rendering it almost invaluable to manufacturers and merchants. 8. No matches.—The use of matches (the present cause of many fires) is avoided. 9. Steady.—As it is not affected by wind, draught or storm, it burns with perfect steadiness.

Further information in regard to this system of lighting may be had from the Brush Electric Light Co., Cleveland, Ohio.

Does Free Trade Give Stability to Business?

The following statements are published in the London Iron and Coal Trades Review, and relate primarily to the trade of Great Britain. They pretty effectually prove that free trade does not give that stability to trade which free traders so persistently claim:

In 1865 the American civil war ended, and was immediately followed by a forced activity of trade; many joint stock companies were formed.

1866 there was an Austro-Prussian war of six week's duration, which considerably affected Continental trade. There was a financial and commercial panic, and among the failures was the celebrated firm of Overend, Guernsey & Co. A good number of firms collapsed through over-trading.

In 1867 a bad harvest had something to do with dwindling trade, but in 1868, with one of the best harvests on record, stagnation was as bad as ever.

In 1869 there was a great extension of railways on the Continent, and business improved.

In 1870 and 1871 occurred the Franco-Prussian war, which, when peace was concluded, was followed by one of the most remarkable "booms" on record. That led to an extension of our capacity for production, and to a vast amount of over-speculation, from which we suffered for years; indeed, the North of England Iron Manufacturers' Association traces our present depression to the events which followed that war, for they say, in reply to the Royal Commission, "the origin of the depression from which we suffer, and which is now at the lowest point yet reached, seems to be to some extent a reaction from the coal famine period of 1872-74, and which was perhaps due to the inflation consequent on the Franco-German war in 1870. The amount of capital then invested was out of all proportion to the subsequent requirements of the trade, and the demand has not yet overtaken the capacity for supply."

In 1874 the "boom" quickly subsided, and wages of workmen, which had gone up by "leaps and bounds" in the previous three years, fell off as rapidly, in spite of the strikes, which were now as unsuccessful as they had previously been successful.

1875 and 1876 were marked by many failures in the iron trade, and in 1877, when the Russo-Turkish war commenced, trade became more stagnant and the collapse of manufacturers more numerous than ever.

In 1878 fear of our becoming involved in a war with Russia had much to do with intensifying the depression of trade, and there was quite a restriction of credit in this

country. This was the year in which the Glasgow Bank failed.

In 1879 business was exceedingly depressed for the first eight months, but suddenly there sprang up an unprecedented demand for iron for the United States, and prices again advanced by "leaps and bounds," though to nothing like the figures which prevailed in the year 1873.

In 1880 the American "boom" collapsed, and our exports thither began to fall off. Still, our trade went on increasing, money was cheap, our harvest fair, and our colonies were better customers. This was continued in 1881, when commenced the remarkable increase of activity in shipbuilding, which continued over 1882 and 1883. Never had our shipyards been so busy. There was also in 1881 a vast extension of railways in the United States, which gave our rail mills plenty of work.

In 1882 trade generally was active, and wages of workmen went up; but in 1883 business fell off again, and 1884 and 1885 have been sorry years, not so much because of the decrease in the volume of our business as because of its unprofitable character. The harvests were good in each year, but political complications, and especially the fear of war with Russia in Afghanistan in 1885, kept business in a very unsatisfactory condition.

Calera Land Company.

CALERA, ALA., Feb. 23 1886.

Editor Manufacturers' Record:

This company wants the address of parties who manufacture or furnish metal cornices, copings, &c. I have looked over your paper, but cannot find any advertisement covering this line of business. Will you please call attention to our requirement in your next issue, or if you can give us the name of such parties, please do so, and oblige,

Yours respectfully,

JOHN H. DUNSTAN,
Engineer and Superintendent.

DURHAM, N. C., March 1, 1886,

Editor Manufacturers' Record:

I will not rebuild the burned bag factory at present, as I have a building suitable for the purpose already built. I shall resume work as soon as I can put in new machinery. This factory gives employment to 97 women and girls and 4 men. J. S. LOCKHART.

THE MANUFACTURERS' RECORD, of Baltimore, is a paper of priceless worth to all manufacturers. Its statistics of Southern industries, its live interest in the prosperity and welfare of the South, its hearty championship of the industrial interests of our section, entitle it to warmest support and encouragement.—Towson (Md.) Voice.

MR. A. POPE has been appointed general freight agent of the Norfolk & Western Railroad, vice Mr. Chas. P. Hatch, resigned. Mr. W. B. Beville has been appointed general passenger and ticket agent.

JACKSON, TENN., wants to arrange for electric light. Correspondence can be addressed to C. T. Bates.

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more.

New Departure in Colonization.

Mr. J. A. Goulden, of Pennsylvania, the editor of the Emerald Vindicator, who has been devoting himself for some years past to settling Protestant and Catholic colonies in the West—in Minnesota, Michigan, Dakota, Colorado and Nebraska, announces that he will hereafter turn his attention to Georgia and Alabama. The colonies he has settled in the West are all satisfied and prosperous, but he says that there is a demand for a milder climate, and for the improved agricultural and industrial conditions that must be a necessary accompaniment.

Mr. Goulden says that the inquiries as to the South are numerous, and are not confined to those engaged in the mills and workshops, but include many well-to-do farmers and men of means who believe that the opportunities in the South are far greater than in Pennsylvania. What the people of that section want are facts and figures as to the mineral and agricultural wealth of the South, the opportunities for capital, brains, energy and labor, and the feelings of the people towards new-comers who desire to make the South their permanent abiding place.

Mr. Goulden will visit Georgia first, and will make Atlanta his headquarters at least for a few weeks. He will make a thorough investigation as to coal and iron fields, the marble beds, the prospects of industrial development, and make such report as is warranted by the facts.—Atlanta Constitution.

THE "National Library," published by Messrs. Cassell & Co., New York, is certainly a marvel of excellence and cheapness. A volume is issued weekly, each containing about 200 pages, well-printed in clear, readable type, on good paper, and strongly bound in a neat paper cover. The price is 10 cents a volume, or \$5 a year. The numbers already issued contain "My Ten Years Imprisonment," by Silvio Pellico; "Childe Harold," by Lord Byron; the Autobiography of Benjamin Franklin; "The Complete Angler," by Isaac Walton, and "The Man of Feeling," by Henry Mackenzie. They are for sale in Baltimore by W. E. C. Harrison, 126 Baltimore street.

Stamping Waster Tin Plates.

[From the London Ironmonger, February 13, 1886.]

It will be very interesting to note whether or not the tin plate manufacturers of South Wales will largely follow the example of W. Gilbertson & Co., in declining to stamp waster tin plates. This company now stamp their "Old Method" plates after the tinning process has been completed, and they only stamp such plates as are critically adjudged to be "perfects." They stamp no wasters with the above brand, and announce that no wasters of their production will, with their knowledge or sanction, be sent to the United States, but will be disposed of in

England under some other mark. From the first portion of this arrangement there can be no dissent, and it ought to secure for W. Gilbertson & Co's brand a high reputation and a large sale in the United States. The wisdom of the plan thus adopted is so obvious that we might expect it to be generally adapted in the tin plate trade, yet the sinuosities and subtle intricacies of that business are so numerous and confusing that such a result is highly improbable. Deceptions and "juggles" by means of wasters are so profitable to many of the merchants and dealers that they will probably resist any such change, whilst the speculators, of course, will oppose any alteration which would be likely to simplify the business or to limit their opportunities for "hocussing" both buyers and sellers. A good example has been set in this instance, however, and we hope that some, at least, of the manufacturers will have sufficient backbone to follow suit.

ATTENTION is called to the advertisement under Business Chances of Florida orange property for sale.

Managers of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises, and needing machinery or supplies of any kind, will find it profitable to consult the advertising columns of the MANUFACTURERS' RECORD. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

WANTED

By Practical Machinist, with five years' road experience as contractor, salesman and collector, position to travel for some FIRST-CLASS Machinery Supply House in Georgia, South Carolina and Florida. Personally known and liked. Best reference. Address A. B., 286 FOURTH ST., MACON, GA.

A1 SEWER PIPE CLAY,

Delivered f. o. b. vessel at Bermuda Hundred, James River, at \$1.00 per ton. Write for sample.

JAMES R. WERTH,

RICHMOND, VA.

BEAUDRY'S UPRIGHT CUSHIONED

Power Hammer,

BY FAR THE BEST!

Blow accurate, powerful and elastic.

Will increase the profits of any shop.

70 Kilby St.,

BOSTON, MASS.

Beaudry & Cunningham.

Beaudry & Cunningham.

ALWAYS ASK FOR
ESTERBROOK'S
CELEBRATED
STEEL PENS.

PENS

LEADING NUMBERS:

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For Sale by all Stationers.

The Esterbrook Steel Pen Co.

26 John Street, New York

Derby Roll Top and Flat Top Desks



The BEST and CONSEQUENTLY the CHEAPEST OFFICE DESK IN THE WORLD.

Derby & Kilmer Desk Co.,

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OFFICE AND WAREHOUSES:

55 to 65 Charlestown St.,

BOSTON, MASS.

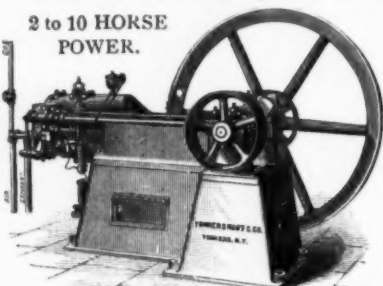
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PARKER GAS AND GASOLINE ENGINE.

Guaranteed to Run with Less Gas than Any Other Gas Engine Known.

Always Ready
to Start.
Lighted by Electric
Spark.
Simple.
Durable.
Effective.

2 to 10 HORSE
POWER.



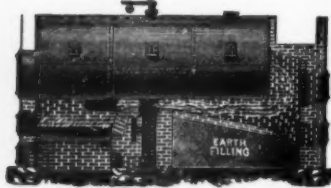
No Boiler.
No Coal.
No Ashes to
be Removed.
No Chimney.
No Engineer.
No Smoke.
No Smell.

No Slide Valve to Get Out of Order. Does Not Hazard Insurance.
No Small Parts to Clog Up. Is Noiseless in Running.
Requires no Matches to Ignite the Gas. Can be Run with Any Kind of Gas.
It is the only Engine that can be run equally as well with Gasoline Gas or Carburetted Air, as with regular
fixed gas. Speed can be adjusted while running from 80 to 300 revolutions per minute.

YONKERS MFG. CO. Salesroom, 16 Dey St., New York.
SEND FOR ILLUSTRATED CIRCULAR AND PRICE-LIST.

JARVIS PATENT FURNACE

FOR SETTING STEAM BOILERS.



Economy of Fuel, with increased capacity of Steam
Power. Like the Siemens Process of Making
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the fire. Will burn all kinds of waste fuel without a
blast, including Slack Coal, Sawdust, Logwood Chips,
&c. Send for Circulars.

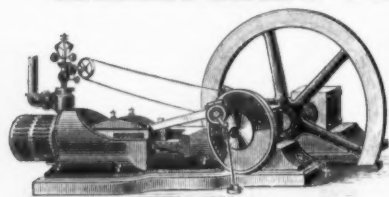
Jarvis Engineering Co.,
A. F. UPTON, Treas. and Gen'l Manager,
61 Oliver St., Boston, Mass.
JOSHUA C. COE, Agent for Maryland and Virginia,
O'Donald's Wharf, Baltimore, Md.

SOUTHERN REFERENCES:

Eagle & Phenix Mfg. Company, Columbus, Ga.
Anniston Mfg. Co., Anniston Ala.
J. P. King Mfg. Co., Augusta, Ga.
Rose Mining Co., Charleston, S. C.
Maryland Pavement Co., Baltimore, Md.
Brush Electric Light Co., Baltimore, Md.
Bttrick, Matocca and Battersea Mfg. Co's.,
Petersburg, Va.
Rasin Fertilizing Co., Baltimore, Md.
Tanner & Delaney Engine Co., Richmond, Va.
Sibley Mills, Augusta, Ga.

Graniteville Mfg. Co., Graniteville, S. C.
Charleston Bagging Co., Charleston, S. C.
P. H. Mayo & Bros., Richmond, Va.
Phosphate Mining Co., Beaufort, S. C.
Brush Swan Electric Light Co., Norfolk, Va.
Columbus Ice & Refrigerator Co., Colum-
bus, Ga.
Lenoir Manufacturing Co., Lenoir, East
Tennessee.
Vancleave Mill, Graniteville, S. C.

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YOUNGSTOWN, OHIO,

SOLE BUILDERS OF THE

PORTER-HAMILTON ENGINE

50 to 500 Horse-Power. Modern design. PLAIN, STRONG, EFFECTIVE, ECONOMICAL.
COSTS LESS THAN ANY OTHER FIRST-CLASS ENGINE. Send for Photograph.

BLAST FURNACE ENGINES ON HAND.

ALSO A STOCK OF OTHER ENGINES (our make.) Prices and description on application.

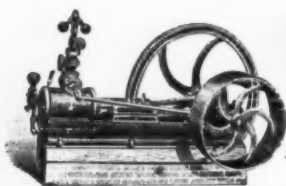
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Engines & Boilers

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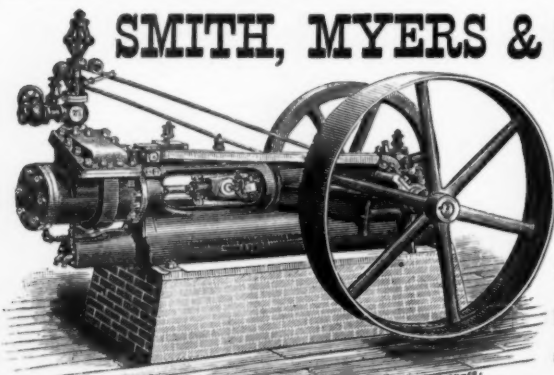
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5 to 500 H. P. Special stock sizes 5 to 50 H. P., both Stationary and Semi-Portable.

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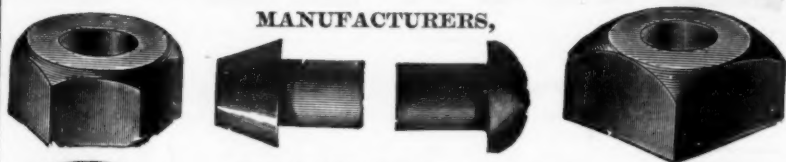
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MANUFACTURERS OF
PATENT TERRAPIN
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from 15 to 200 Horse Power.
BOILERS AND
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Send for Illustrated Catalogue
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Cold Punched, Chamfered, Trimmed and
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Finished and Case-Hardened Steel Hexagon Nuts.

BRIDGE RODS and RIVETS.

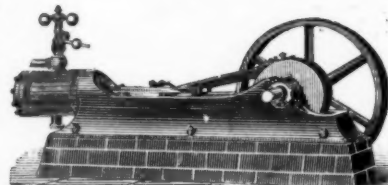
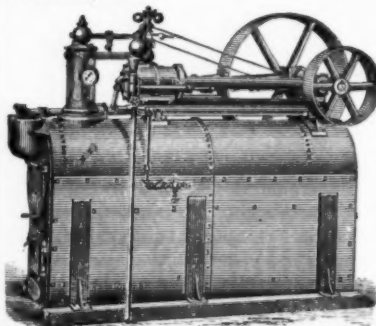
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PORTABLE and STATIONARY
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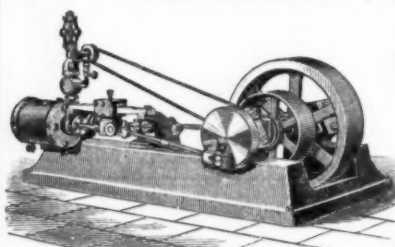
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WORKS, BROOKLYN.

A simple, compact, thoroughly well made,
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STATIONARY ENGINE,

Specially adapted for ELECTRIC LIGHTING, &c.
Send for Circular.



HOISTING ENGINES A SPECIALTY. ALSO, BOILERS.

B. W. PAYNE & SONS

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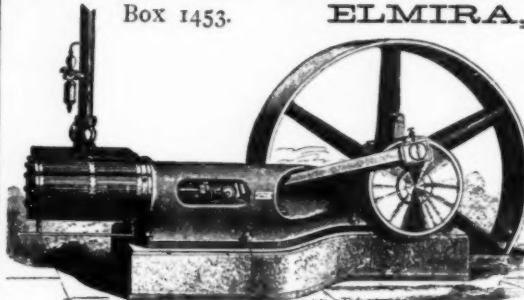
ELMIRA, N. Y.

Builders of Stationary

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FINE AUTOMATIC ENGINES.

VERTICAL AND SAFETY ENGINES AND BOILERS

For every duty. Particularly adapted for the South. Thousands now in use. We guarantee
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The NORWALK ENGINES And Boilers

In Sizes from 4 to 60 H. P.

THESE ENGINES CANNOT BE SURPASSED FOR

SIMPLICITY OF CONSTRUCTION
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The smaller sizes are especially designed for running light
machinery, such as Printing Presses, Cheese Factories,
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Norwalk Machine Works, Norwalk, O.



GET THE BEST.



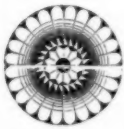
A Good Water Wheel Increases
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Whole Plant.

GET THE BEST AT FIRST AND AVOID THE
EXPENSE AND DELAY OF CHANGING
THE WHEELS.

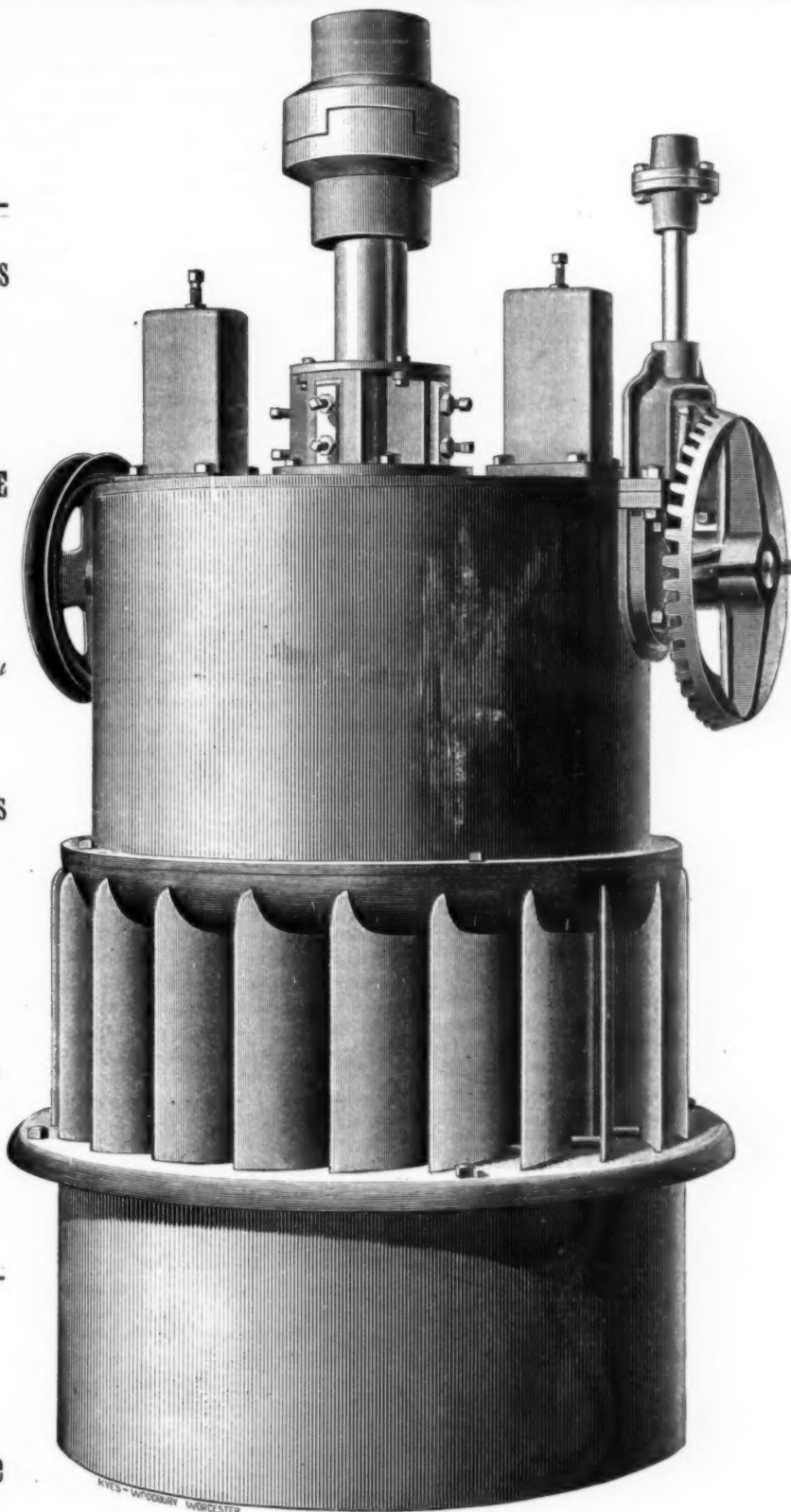
A Good Wheel Will Serve You
Well for Twenty Years.

THE BEST IS THE CHEAPEST. IT DOES
MORE WORK, LASTS LONGER, AND
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COMMON WHEEL.

The Hercules Gives the Most Power for its Size
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any Wheel Ever Made.



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When it is considered that
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POWER COMPANY test
every wheel that is put in in
Holyoke, and use the wheels
as a gauge or meter for mea-
suring the water to the
manufacturers and charge
them for the actual quantity
of water used, it will be seen
that the HERCULES stands
first in the estimation of
Holyoke manufacturers as an
economical wheel in the use
of water for the amount of
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CULES, we believe, is the
only wheel of which all the
sizes, both right and left hand,
have been tested, some of
them many times, and all
brought to the standard of
excellence which has been
set by the makers and de-
manded by their customers.



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THE HERCULES WATER WHEELS

THE HEAD OF WATER ON THE WHEELS AND THE POWER FURNISHED BY THE HOLYOKE WATER POWER CO.:

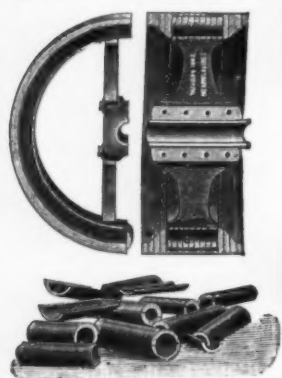
	Diam. in inches.	Head on Wheels.	Horse Power.	Date of Setting.		Diam. in inches.	Head on Wheels.	Horse Power.	Date of Setting.		Diam. in inches.	Head on Wheels.	Horse Power.	Date of Setting.
Albion Paper Company.....	39	25	265	1878	Geo. R. Dickinson Paper Company...	36	19	170	1883	The Massasoit Paper Company.....	30	19	197	1883
Albion Paper Company.....	24	25	115	1883	Holyoke Water Power Company.....	30	19	115	1882	Union Paper Company.....	45	20	285	1882
Albion Paper Company.....	45	27	445	1880	Holyoke Warp Company.....	48	11	130	1877	Union Paper Company.....	30	20	125	1882
Albion Paper Company.....	30	27	200	1883	Massachusetts Screw Company.....	27	19	90	1882	Valley Paper Company.....	42	27	390	1882
Chemical Paper Company.....	4-30	23	620	1880	Merrick Thread Company.....	48	12	15	1880	Wauregan Paper Company.....	42	18	210	1879
Chemical Paper Company.....	5-18	23	275	1880	Newton Paper Company.....	48	21	330	1880	Wauregan Paper Company.....	33	18	130	1882
Chemical Paper Company.....	33	23	185	1880	Nonotuck Paper Company.....	48	20	570	1881	Whiting Paper Company.....	27	18	85	1882
Chemical Paper Company.....	42	23	305	1880	Nonotuck Paper Company.....	27	20	175	1881	Whiting Paper Company.....	18	15	30	1880
Chemical Paper Company.....	2-48	23	800	1882	Riverside Paper Company.....	45	20	325	1880	Winona Paper Company.....	48	28	540	1880
Connecticut River Pulp Company....	36	18	155	1881	Syms & Dudley Paper Company.....	45	20	495	1881	Winona Paper Company.....	24	28	135	1880
Crocker Paper Company.....	39	25	300	1883	Syms & Dudley Paper Company.....	24	20	140	1881					
Farr Alpaca Company.....	48	19	300	1878	Springfield Blanket Company.....	36	18	155	1877					
Franklin Paper Company.....	39	20	215	1883	The Beebe & Holbrook Paper Co....	24	19	75	1884					
Geo. R. Dickinson Paper Company....	2-45	19	520	1883										

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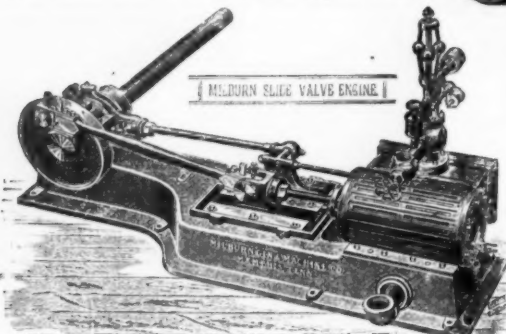
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THE ACME SELF-CLAMPING PAPER CUTTERS,

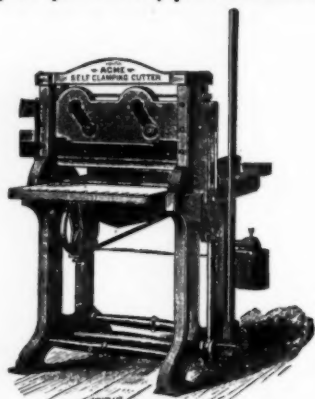
Accurate, Durable and Strong, Saves Time, Very Rapid, Superior in every point of Excellence.

This line of cutters now enjoys the highest reputation for strength, power, durability, accuracy, simplicity, convenience and a superior principle of operation, and they are used by the leading printers, book binders, paper dealers, lithographers and paper manufacturers of the country. The essential features are

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4. A perfect system of side squares.
5. Economical and convenient round cutting sticks. Giving 50 cutting surfaces where there is only 8 on other makes.

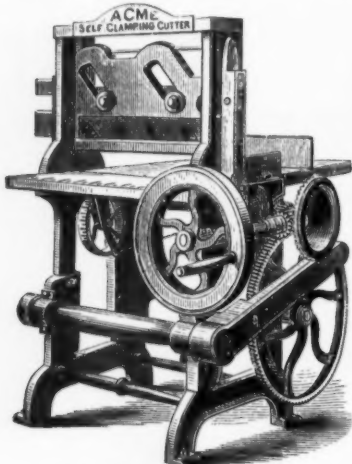
A great number of little conveniences found in no other cutter. With every facility for taking up wear and adjusting correctly.

Thorough construction, steel shafts are used on all, and cut geared in the larger machines, and everything of the best. Having the best machines in the world, the manufacturer will not cheapen the machine, and will guarantee them satisfactory, or they can be returned at his expense.



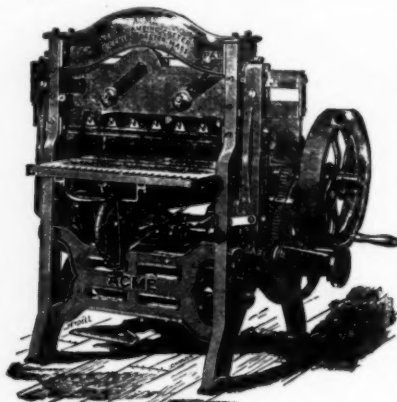
THE LEVER ACME.

Strongly made, gaged with an indicator, has side squares, and is warranted accurate. The lever is very long, giving the greatest power, and is made of wrought iron.



HAND WHEEL ACME.

Specially designed for those who require the heaviest work done, but have no steam power. It will cut any amount of paper that can be put under the clamp with the greatest ease, but is slower than the lever cutter. The balance wheel is in front, at the operator's right hand, and may be operated without change of position.



REGULAR ACME.

DOUBLE GEAR.

This machine is made very strong and heavy. Power is applied at both ends of the knife bar. Designed for the heaviest class of work. Unsurpassed by any first-class cutter made. Can be operated by hand with ease.

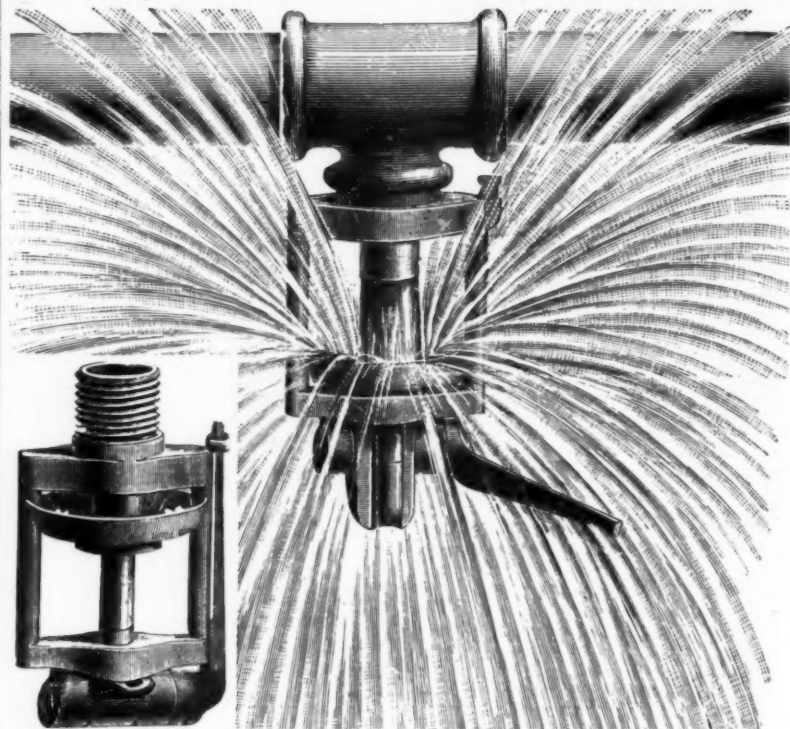
This cut shows the new Treadle Clamp recently applied to the Acme Cutters, by which the operator has the use of both hands while clamping the paper. A regular hand clamp may also be applied to any of these cutters if desired. Price of either style is \$75 extra.

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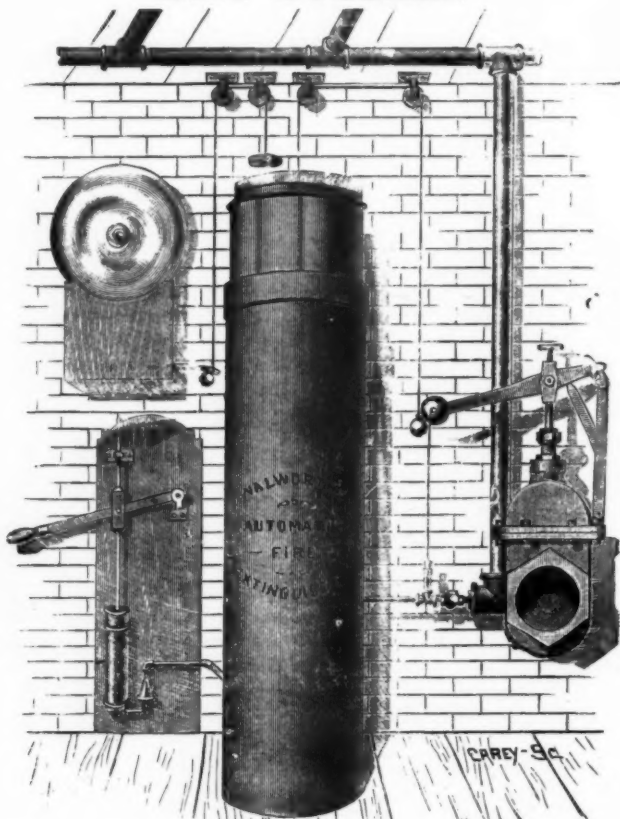
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WALWORTH Automatic FIRE Extinguisher.

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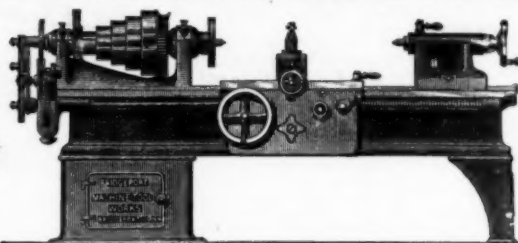
By this system the pipes are filled with compressed air under a pressure of one pound to the square inch. Attached to the pipes is an Airometer, the inner tank having a weight upon it of 100 pounds. This tank and weight is raised by the compressed air, and as soon as a Sprinkler is opened the pressure, being released, allows the tank and weight to fall, thus opening a valve and either starting the pump or releasing the water from tank or street mains. It is so arranged that an alarm will sound just before the valve is to be opened, notifying that there is a fire, or that more air must be pumped. The entire supply of air can be produced by a few strokes of the air pump. Manufactured by the

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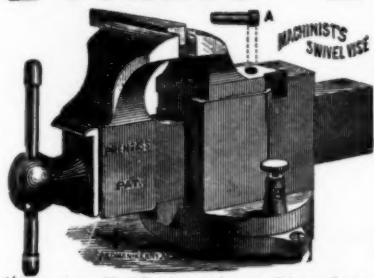
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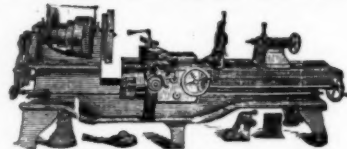
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 Nimick & Brittan's Burglar-Proof Locks... dis 50 %

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 Penfield Block Co., Apple, Hickory and
 Lignumvite... dis 30 %

MEAT CUTTERS.
 Dixon's (P. S. & W.) Nos. 1, 2, 3, 4...
 Perry's, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10...
 Woodruff's (P. S. & W.) Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10...
 Hales' Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10...
 Kieser's No. 55...
 Kieser's Gem...
 Kieser's No. 82...
 Kieser's Monarch...
 Beef Shaver, (Enterprise Mfg. Co.)...
 Molasses Gates...
 Stebbins Patterns...
 Stebbins Genuine...
 Stebbins Tinned Ends...
 Chase's Hard Metal...
 Self-Measuring, (Enterprise)...
 Lincoln's Pattern...
 Weed's...
 Boss Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10...
 Boss, Japanned Finish...
 Boss, Bronze Finish...
 Square Nuts...
 Hexagon Nuts...
 Washers...
 Zinc and Tin...
 Brass and Copper...
 Malleable (Hammer's)...
 Per dozen...
 FINKING IRONS.
 Astor Plaiting Machine...
 Crown Plaiting Machines...
 Planes and Plane Irons.
 Bench, First Quality...
 Bench, Second Quality...
 Molding...
 Bailey's (Stanley R. & L. Co.) New list, Jan. 1879...
 The Stanley (S. R. & L. Co.) new list, January 1879...
 Bailey's...
 Plane Irons, Butcher's...
 Plane Irons, Auburn Tool Co...
 Plane Irons, Ohio Tool Co...
 Plane Irons, Sandusky Tool Co...
 Pliers and Nippers.
 Button's Patent...
 Hall's Pat. Compound Lever Cutting Nippers...
 No. 2, 5 in. \$1.30; No. 4, 7 in. \$1.20; No. 5, 9 in. \$1.20...
 Gas Pliers...
 Plumbers and Levels.
 Disston's...
 Stanley R. & L. Co.'s Pat. Adjustable...
 Stanley R. & L. Co.'s Non-Adjustable...
 Chapin's Patent Adjustable...
 Chapin's Non-Adjustable...
 Standard Rule Co.'s New Adjustable...
 Standard Rule Co.'s Non-Adjustable...
 Pocket Levels...
 RAILS.
 Sliding Door, Wrought Brass...
 Sliding Door, Bronze Wrt. Iron...
 Sliding Door, Iron, Painted...
 Sliding Door, Iron, Painted...
 B. D. for N. E. Hangers...
 Per 100 feet...
 Rivets.
 Iron and Tinned, new list, Dec. 10, 1881...
 In bulk, new list, Dec. 10, 1881...
 Copper Rivets and Burrs...
 Nos. 7, 8, 9, 10, 11, 12, 13, 14, 15...
 Rivet Sets...
 Rods.
 Stair, Brass...
 Stair, Black Walnut...
 Rules.
 Boxwood...
 Ivory...
 Chapin's...
 Standard...
 Stanley...
 Stevens & Co...
 Stevens & Co. Miscellaneous...
 Self-Heating, Charcoal...
 Mrs. Pott's Irons...
 Enterprise Star Irons, new list, July 20, 1881...
 Comb'd Fluter and Sad Iron...
 Common Sad Irons...
 Sand Paper.
 Baeder & Adamson's Flint, 0000...
 Baeder & Adamson's Flint, 2, 2 1/2, 3, 4, 5...
 Baeder & Adamson's Flint, Assort'd...
 Baeder & Adamson's Star...
 Baeder & Adamson's Emery...
 J. Bartle's Sand, Flint and Emery Paper...
 Clancy's No. 100, per gross...
 Clancy's No. 101, per gross...
 Clancy's No. 103, per gross...
 Common...
 Patent...
 Silver Braided Lake Hemp...
 Silver Braid, Lake White Cotton...
 Silver Braided Lake Drab Cotton...
 Silver Lake Cable Laid, Bengall Unbleached Hemp, 17 cts...
 Russian Hemp, 19 cts...
 Italian Hemp, 21 cts...
 Samson Braided, white cotton...
 " " drab cotton...
 Solid Eyes, in 500-lb. lots and over...
 Sausage Stuffers or Fillers.
 Miles...
 Enterprise Mfg. Co...
 Monarch...
 Saws.
 Boynton's Lightning Cross Cuts, new list...
 Boynton's Circular and Mill...
 Boynton's Ice...
 Boynton's Lightning Hand, Panel and Rip...
 Disston's Circular...
 Disston's Mill...
 Disston's Cross Cut...
 Disston's Hand, Panel, Rip, &c...
 Hubbard, Bakewell & Co. Circular Saws...
 Hubbard, Bakewell & Co. Cross Cuts...
 Hubbard, Bakewell & Co. One-Man's, X Cut...
 Hubbard, Bakewell & Co. Mill Saws...
 Peace Circular and Mill...
 Peace Hand, Panel and Rip...
 Peace Cross Cuts...
 Peace Band Saws, all widths...
 Webster Cross Cut, with handles...
 Griffin's Hack Saws and Blades...
 Saw Frames.
 White...
 Saw Rods...
 Saw Sets.
 Stillman's Genuine...
 Stillman's Imitation...
 Common Lever...
 Leach's...
 Hammer, Hotchkiss...
 Aiken's Genuine...
 Aiken's Imitation...
 Disston's...
 Morrill's...
 Hatch, Counter, No. 171...
 Hatch, Tea, No. 161...
 Union Platform, Keystone...
 Chicago Scale Co...
 Forsyth Scale Co...
 Howe's...
 Chatillon's Grocers...
 Chatillon's Eureka...
 Family Universal...
 Family Favorite...
 Family Turnbull's...
 Scale Beams, List of Jan. 12, 1882...
 Adjust. Box Scraper (S. R. & L. Co.)...
 Box, 1 Handle...
 Box, 2 Handle...
 Foot...
 Ship, common...
 Wilson Mfg. Co...
 Screw Drivers.
 Douglas Mfg. Co...
 Disston's...
 Cowles Mfg. Co...
 Stanley Rule & Level Co's Var. Hdl's...
 Stanley Rule & Level Co's Black Hdl's...
 Ratchet...
 Clark's Patent...
 Shephardson...
 Screws.
 Flat Head Bright, less than 1 in. 75 %
 Flat Head Bright, 1 in. and larger...
 Round Head Bright...
 Flat Head Brass...
 Round Head Brass...
 Flat Head Blue (ad 2 1/2 % to net)...
 Brass and Silver Capped...
 Japanned Flat Head...
 Coach, Patent Gimlet Point...
 Coach, Common or Lag...
 Bed...
 Machine, Flat Head, Iron...
 Machine, Round Head, Iron...
 Bench, Iron...
 Bench, Wood, Beach...
 Bench, Wood, Hickory...
 Hand, Wood...
 Hand Rail, Sargent's...
 Hand Rail, Humason, Beckley & Co's...
 Hand Rail, Am. Screw Co., list Jan. 1, 1881...
 Jack (Wilson's)...
 Screen Frames and Mixtures.
 Standard Window Screens No. 1, 2, 3, 4, 5...
 Window Corner Irons, No. 3, 4, 5, 6...
 Door...
 Door Latches, 2 doren, 3 doren...
 Porter's Patent Window and Door Screen Frames...
 Per doz. sets.
 In. In. Bl'k.
 White. Walnut.
 No. 20...
 No. 21...
 No. 22...
 No. 23...
 No. 30...
 Porter's Corners—
 No. 0. Corners and Sticks complete for a three-foot window, 2 doz sets...
 No. 1. Set for Window, 2 doz sets Bronzed...
 No. 1 1/2. " " 2 doz sets, Bronzed...
 No. 4. " " 2 doz sets, Bronzed...
 No. 4 1/2. " " 2 doz sets, Bronzed...
 No. 4 3/4. " " 2 doz sets, Bronzed...
 No. 2 1/2. " " 2 doz sets, Bronzed...
 No. 3. " " 2 doz sets, Bronzed...
 Shears and Scissors.
 American (Cast) Iron...
 Pruning...
 Barnard's Lamp Trimmers...
 Tinner's...
 Massachusetts...
 Seymour's...
 Jersey Shears...
 J. Wiss & Son, Nickel, 30 %
 Japanned, 60 %

SASH LOCK.
 Clancy's No. 100, per gross...
 Clancy's No. 101, per gross...
 Clancy's No. 103, per gross...
 SASH CORD.
 Common...
 Patent...
 Silver Braid, Lake White Cotton...
 Silver Braid, Lake Drab Cotton...
 Silver Lake Cable Laid, Bengall Unbleached Hemp, 17 cts...
 Russian Hemp, 19 cts...
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 Aiken's Genuine...
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 Disston's...
 Morrill's...
 Hatch, Counter, No. 171...
 Hatch, Tea, No. 161...
 Union Platform, Keystone...
 Chicago Scale Co...
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 Japanned Flat Head...
 Coach, Patent Gimlet Point...
 Coach, Common or Lag...
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 Machine, Flat Head, Iron...
 Machine, Round Head, Iron...
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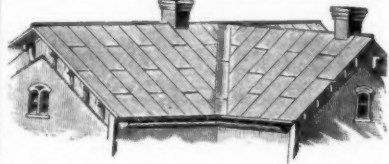
Sliding Door, M. W. & Co. List...
 Sliding Door, R. & E. List...
 Sliding Door, Patent Roller...
 Sliding Door, Pt. Roller, Hatfield's...
 Sliding Door, Russell's Anti-Friction...
 Also see Hangers.
 SHOVELS AND SPADES.
 Ames, New List, July 1, 1881...
 Griffiths...
 Remington's (Lowman's Patent)...
 Rowland's...
 Kimballs...
 Lippincott, new list...
 Hussey, Bins & Co...
 SPOKE TRIMMERS.
 Bonney's...
 Stearns...
 Ives...
 Douglass...
 SILVER PLATED WARE.
 Wm. Rogers Manf. Co...
 Holmes, Booth & Hayden...
 Brown Bros...
 Wallace's Steel Silver Plated...
 Rogers Bros 1847...
 C. Rogers & Bro...
 SILVER PLATED HOLLOW WARE.
 Wm. Rogers Manf. Co...
 Meriden Britannia Co...
 SOLDERING IRONS AND COPPERS.
 Covert's Soldering Irons...
 Covert's Adjustable Coppers...
 BRITANNIA.
 Britannia...
 Tinned, Iron, Table and Tea...
 Tinned Iron Basting...
 German Silver...
 STONE.
 Hindostan No. 1, 5c; Aze, 8c...
 Sand Stone...
 Washita Stone...
 Washita Stone, Slips...
 Arkansas...
 SQUARES.
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 Iron...
 Nickel Plated...
 Try Square and T Bevels...
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 Tinned Swedes Iron Upholsterers' Tacks...
 American Iron Cut Tacks...
 Gimp and Lace Tacks...
 Tinned Gimp and Lace Tacks...
 Copper Tacks...
 Copper Finishing and Trunk Nails...
 Cigar Box Nails...
 Finishing Nails...
 Zinc Glaziers' Point Brads...
 Common and Patent Brads...
 Hungarian Nails and Miners' Tacks...
 Trunk and Clout Nails...
 Tinned Trunk and Clout Nails...
 Basket Nails...
 Chair Nails...
 Tinned Capped Trunk Nails...
 Looking-glass Tacks...
 Picture Frame Points...
 Leathered Carpet Tacks...
 Brush Tacks...
 TAP BORERS.
 Common and Ring...
 Ives' Tap Borers...
 Enterprise Mfg. Co...
 TOBACCO CUTTERS.
 Enterprise Mfg. Co (Champion)...
 Wood Bottom...
 All Iron...
 Wilson's...
 THERMOMETERS.
 Tin Case...
 Storm Glasses...
 Winsted...
 TOR CALKS.
 Winsted...
 TRAPS.
 Game, Newhouse...
 Game, Oneida Pattern...
 Game, Blake's Patent...
 Mouse, Wood...
 Mouse, Round Wire...
 Mouse, Cage, Wire...
 Mouse, Catch-em-alive...
 Cyclon Mouse...
 Ideal Mouse...
 Boss...
 Rat, "Decoy"...
 Delusion Mouse, per doz...
 TROWELS.
 Lothrop's Brick and Plastering...
 Reed's Brick and Plastering...
 Disston's Brick and Plastering...
 Clement & Maynard's...
 Worral's Brick...
 Brades & Walby's...
 Garden...
 TRUCKS (WAREHOUSE, &c.)
 Handy Truck...
 Penfield Block Co's list, 1882...
 Peerless, with Cogs, No. 3...
 Peerless, with Cogs, No. 4...
 Eureka, No. 2...
 VISES.
 Cheney's Combined Vise and Anvil...
 Solid Box—Wilson's...
 " Trenton...
 " Iron City Tool Works...
 Bench—Wilson's...
 " Trenton...
 " Parker's...
 " Prentiss...
 " Bonney's...
 Well Wheels...
 Stephen's Patent Vises...
 WIRE.
 Brass and Copper, list of Jan. 17, 1884...
 Bright and Annealed...
 Bright and Annealed...
 Bright and Annealed...
 Bright and Annealed...
 Copper...
 Galvanized, Nos. 0 to 18...
 Tinned, Nos. 0 to 18...
 Annealed Fence, Nos. 8 & 9...
 Annealed Grape, Nos. 10 to 14...
 Fence Staples, Galvanized...
 Japanned Barb Fence...
 Galvanized Barb Fence...
 Buck Thorn Galvanized...
 Picture Wire...
 Clothes Line Wire, Galvanized...
 Wire Cloth, gree, drab and black...

WRENCHES.
 American Adjustable...
 Baxter's Adjustable "S," list Jan., 1880...
 Baxter's Diagonal...
 Coe's Genuine...
 Coe's "Mechanics"...
 Coe's Pattern, Malleable...
 Coe's Pattern, Wrought...
 Girard Standard...
 Girard Agl...
 Always Ready...
 WRINGERS.
 Universal, XX, No. 2 1/2...
 Universal, XX, No. 2...
 Universal, XX, No. 1 1/2...
 Universal, XX, No. 1...
 Universal, XX, No. 8...
 Universal, XX, No. 12...
 Universal, XX, No. 18...
 Universal, XX, No. 22...
 Peerless, no Cogs, No. 1...
 Peerless, with Cogs, No. 2 1/2...
 Peerless, with Cogs, No. 3...
 MISCELLANEOUS.
 "Diamond" Vegetable Grater...
 Rotary Knife Potato Parer...
 Metallic Shingles...
 Hopper Cherry Seeders...

Universal, XX, No. 2 1/2...
 Universal, XX, No. 2...
 Universal, XX, No. 1 1/2...
 Universal, XX, No. 1...
 Universal, XX, No. 8...
 Universal, XX, No. 12...
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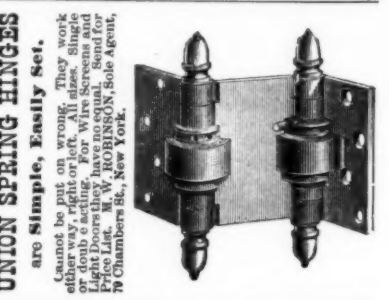
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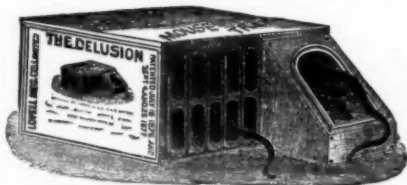
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And sets the trap to catch another."

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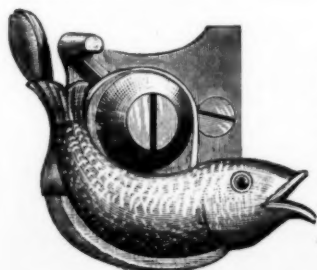
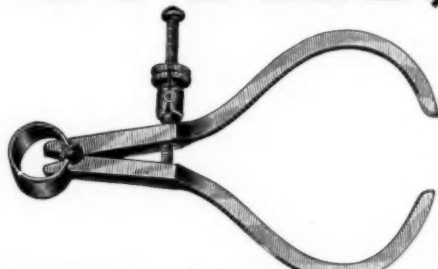
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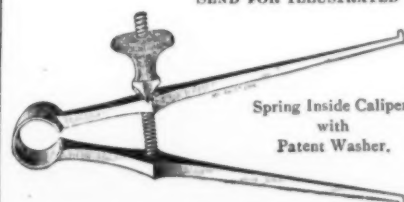
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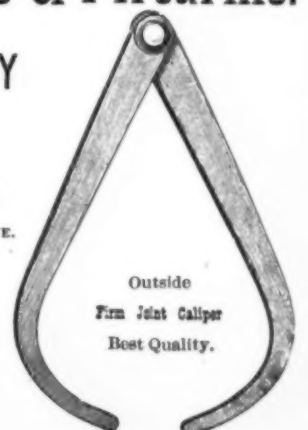
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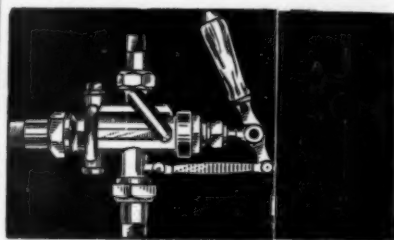
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THE BALTIMORE MANUFACTURERS' RECORD has entered upon its ninth volume. During the last three years it has labored earnestly for the development of Southern industries, and will continue to keep its readers posted on the progress of industrial pursuits in this section. It is doing a good work for the South and deserves the extensive patronage which we are pleased to see it getting.—*New Bern (N. C.) Journal*.

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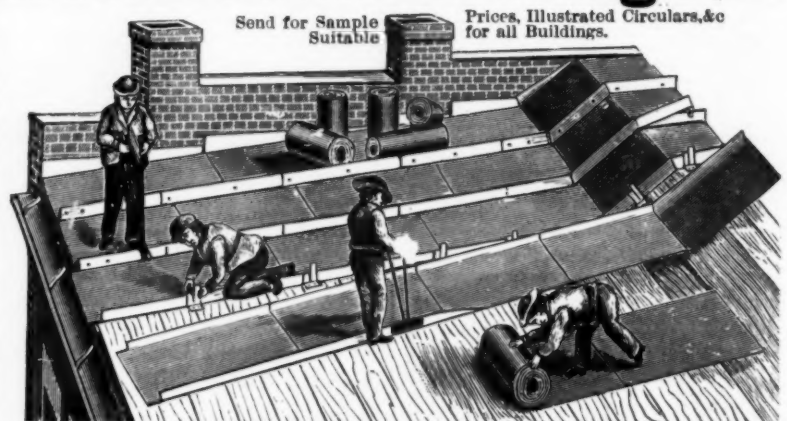
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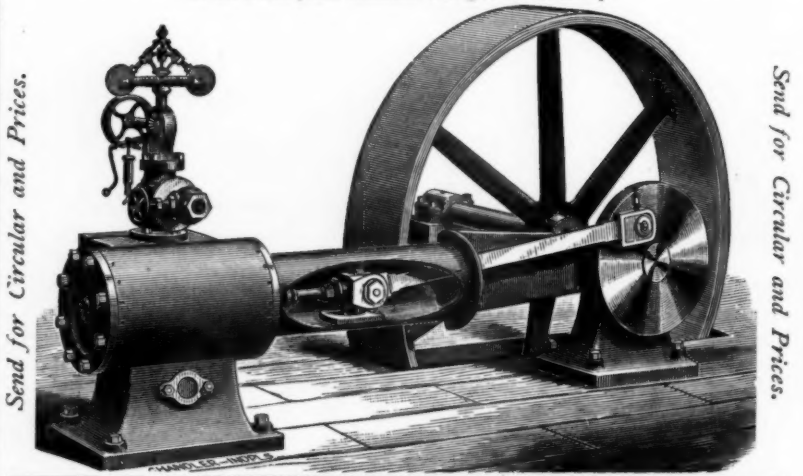
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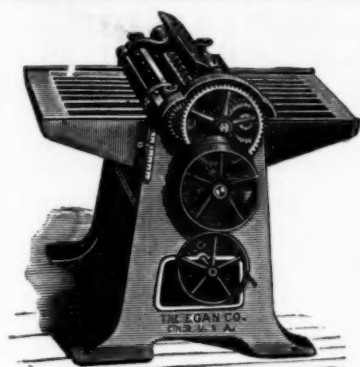
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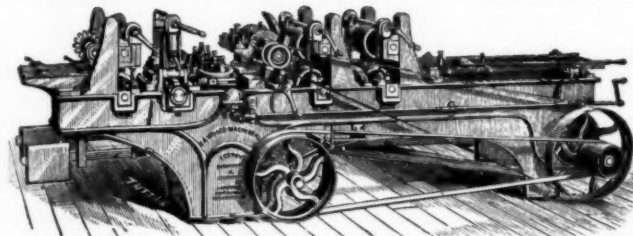
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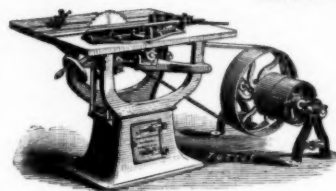
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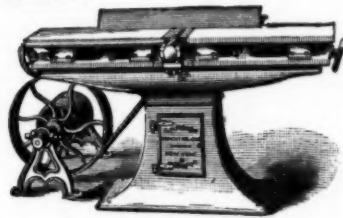


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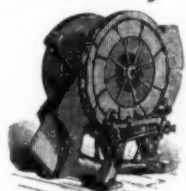
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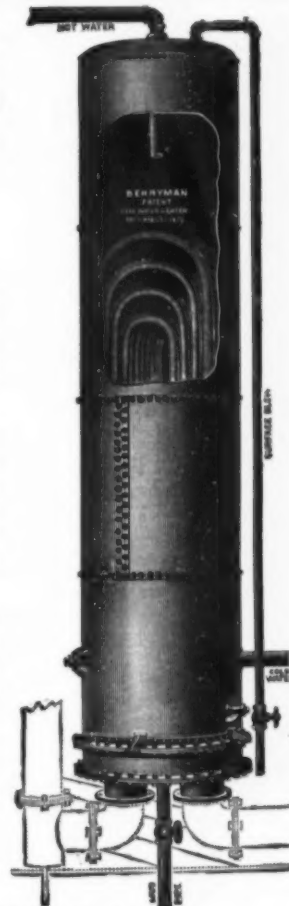
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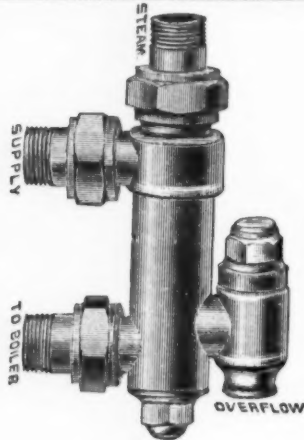


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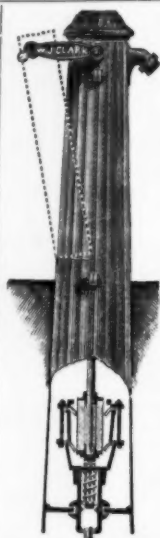
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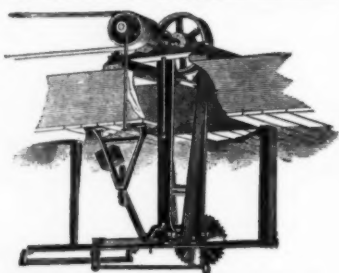
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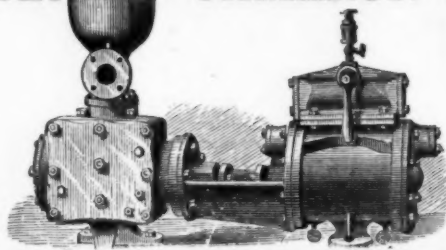
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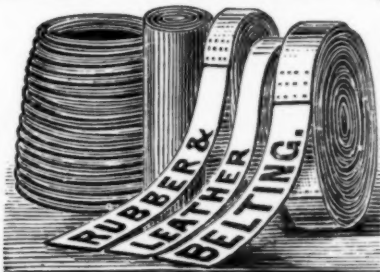
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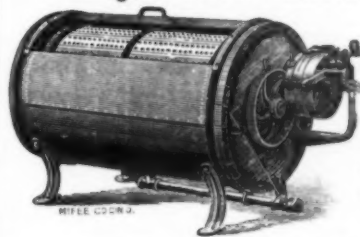
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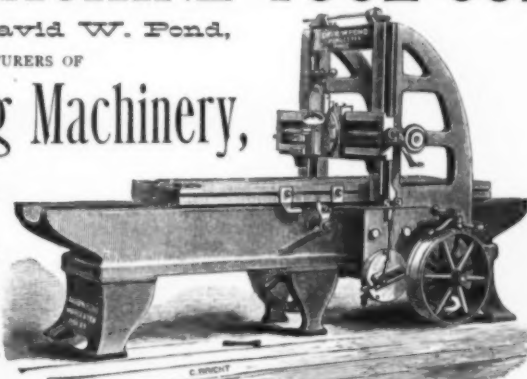
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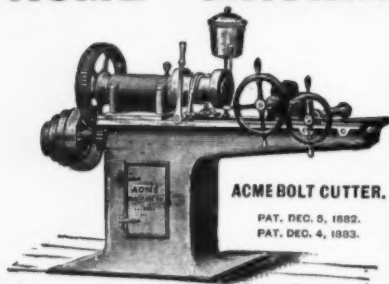
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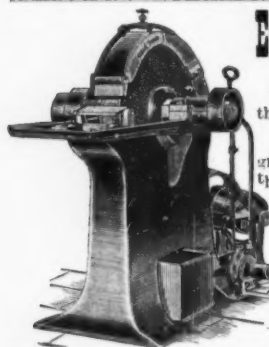
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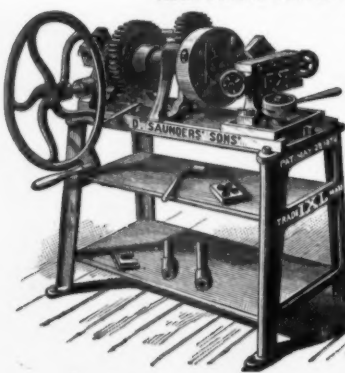
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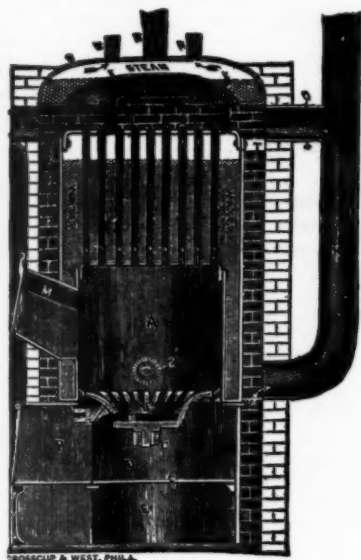
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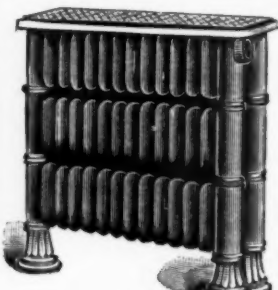
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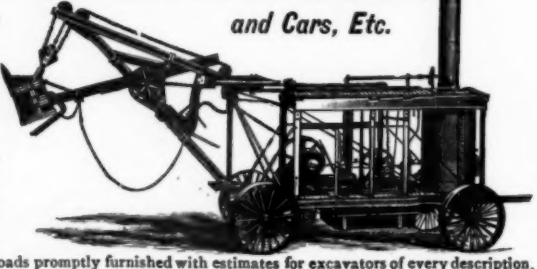
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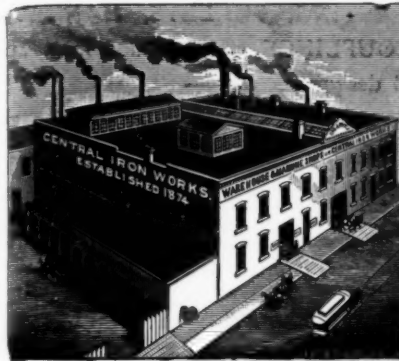
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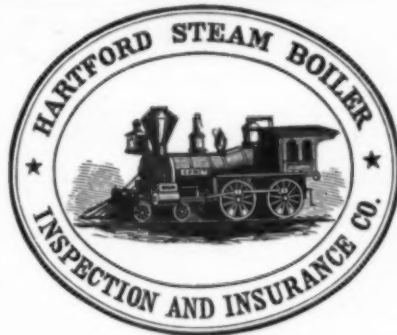
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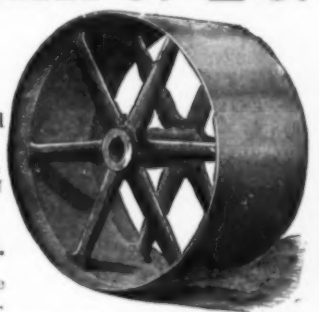
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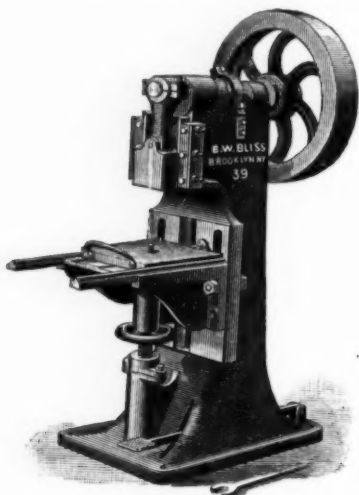
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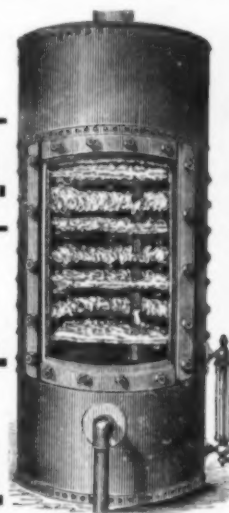
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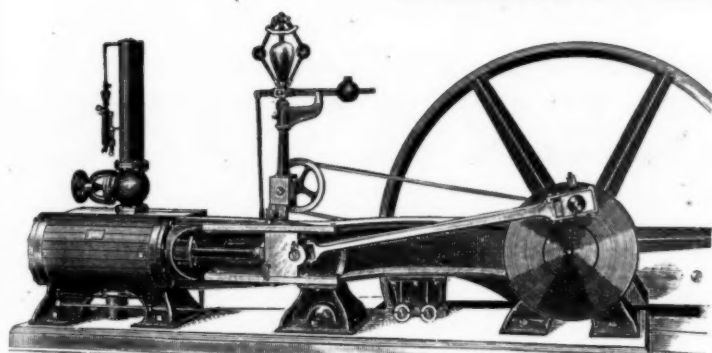
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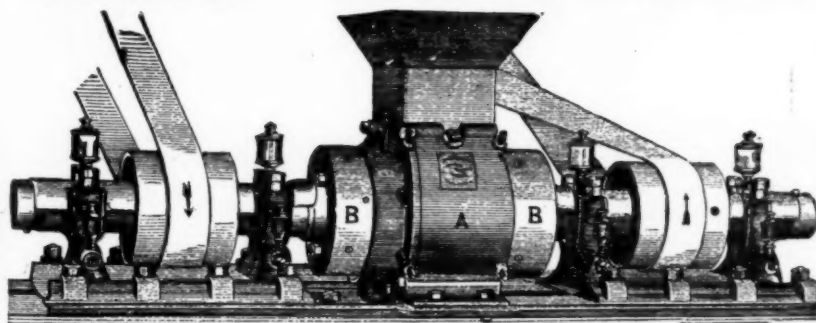
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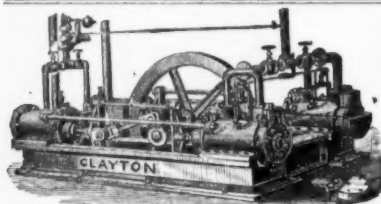


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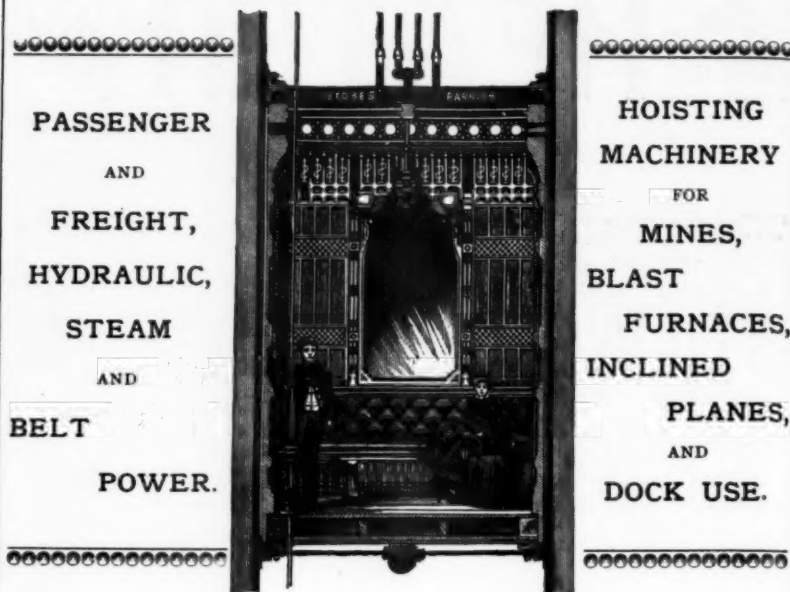
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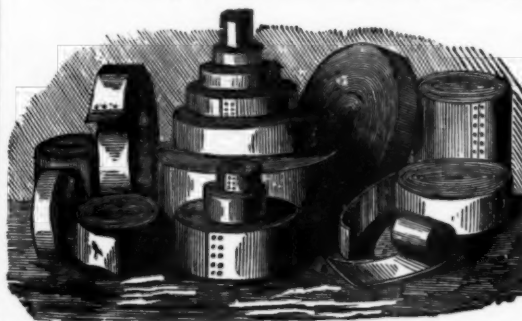
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